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PAGE 60

Choosing The Right LAN

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PAGE 70

Dvorak In The Future

"The OS/2 Sys Trap Door hit hard because in 1997 the world was 80% OS/2 on all platforms. It was a disaster for Bill Gates..."

PAGE 122

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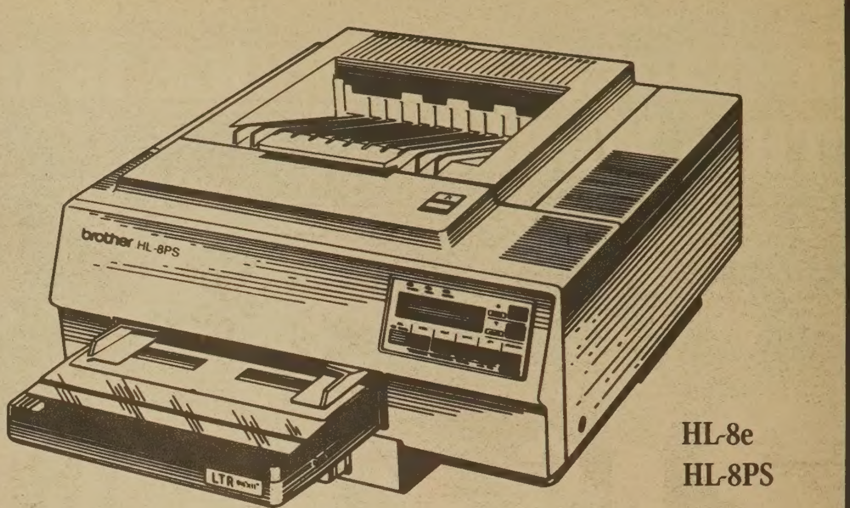

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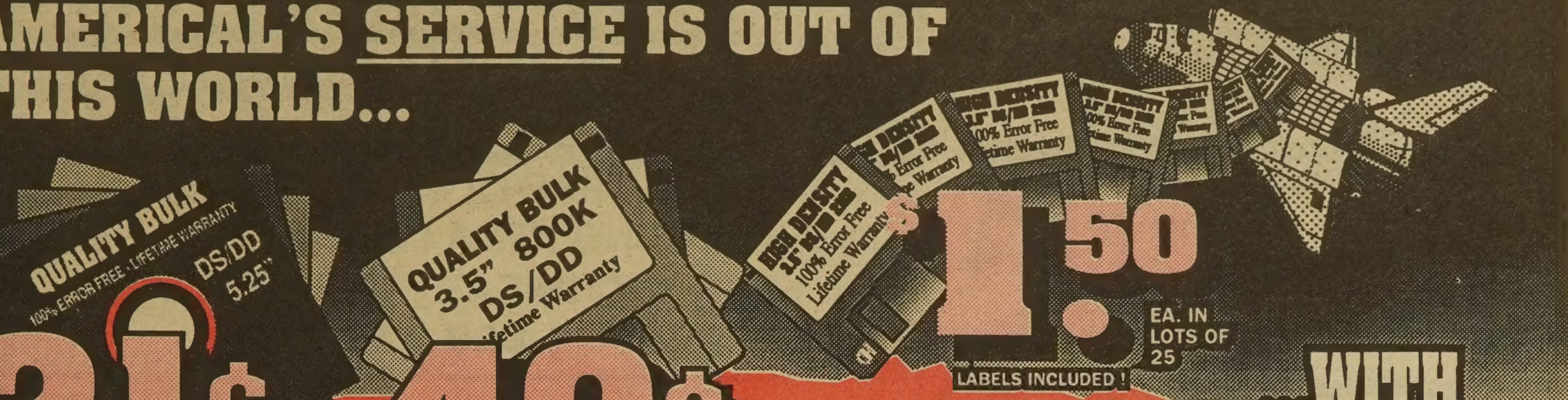

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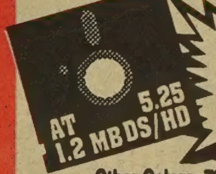

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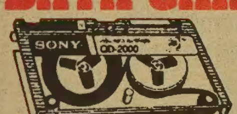

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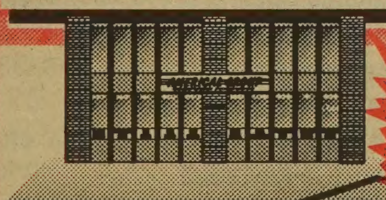

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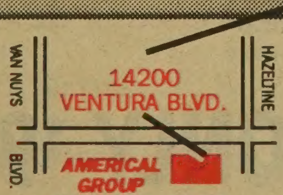

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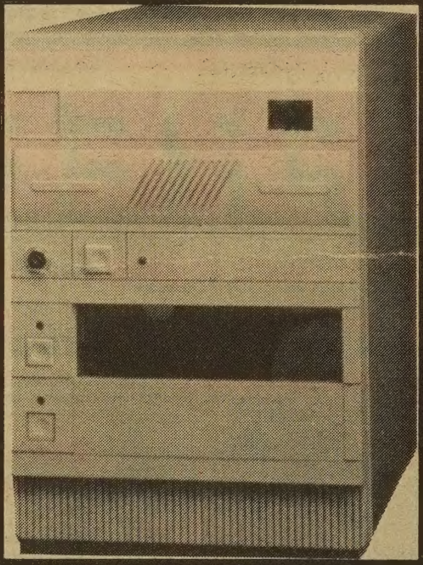

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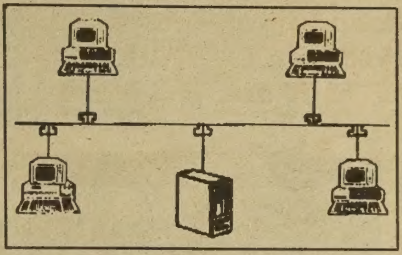

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MORE POWER FOR YOUR 286

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By Ed Kahn
Don't junk that old workhorse—give it a new look, and a new lease on life. Software and hardware options to let you reach new levels of productivity.

50 Multitasking With DESQview

By Lenny Bailes
First of a two-part series. In this section, a look at hardware issues, extended vs. expanded memory, and other things you should know as you prepare to multitask.

28 MicroTimes 100 Nomination Form
Yes, it's that time again. We're preparing our annual list of people who made significant contributions to the microcomputer industry during 1989, and we need your help. So please let us know who you think deserves recognition, and you may win one of ten free subscriptions to MicroTimes! Hurry—we must receive your information by December 1.

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New keyboard and laptop ideas; a call for a new industry gathering.

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December 11, 1989 • Issue 64
Space Confirmation & Non-Camera-Ready Ad deadline: November 22.
Camera-Ready Ad Deadline: November 29.
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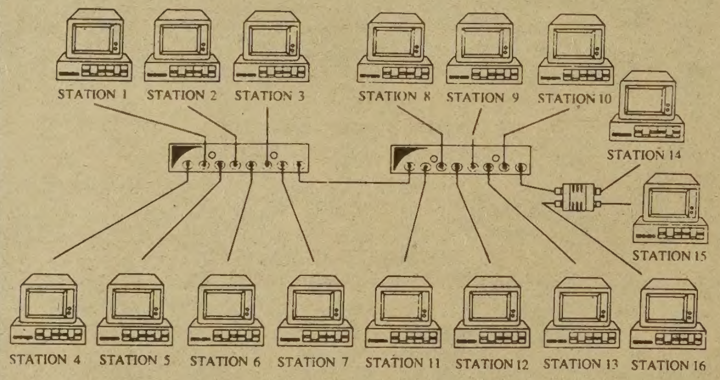

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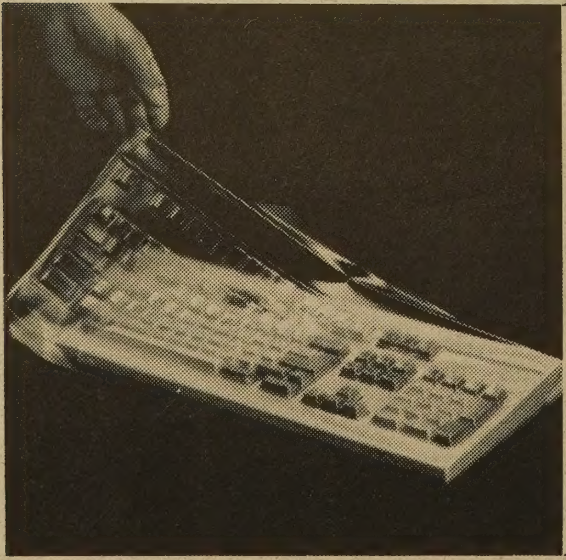

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Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman@well) and MCI Mail (264-3171). He also writes popular microcomputer books.

Quakes In The Valley; dBASE IV 1.1 In Beta; New Mainframe From DEC

Earthquakes And Micros

The great Bay Area earthquake of October had thousands of ramifications on the micro industry. Most of the companies based in Silicon Valley fared reasonably well, getting back to normal within about a week.

Some lost inventory due to water and falling-object damage but were able to continue to fill orders without much interruption. Apple and Borland both lost use of buildings but were able to move workers to new buildings without much pain.

Most of the disaster-relief agencies got quick help from many local user groups and individuals who donated or lent equipment and volunteered time for data entry and organization tasks. Local Red Cross chapters were especially grateful for computer help so that they could match donations with needy victims and find shelter for the newly homeless.

Micro users, it is hoped, learned something from the quake. First and foremost, your backups are important. (If you're asking "What backups?" you're in for big trouble well before the next earthquake.) People who kept backups in places away from their computers understood what can happen when a building is destroyed. People who use their micros every day and lost their electricity for a while are starting to understand the advantages of having a backup portable computer.

Two MacUser staffers, John J. Anderson and Derek Van Alstyne, were killed in the earthquake when the wall of a building that they were driving by crushed their car. MacUser publisher William Ziff has started a trust fund for Anderson's two young children to help cover their futures, and many MacUser employees (as well as the employees of competing magazines) have already contributed significant amounts. You can send contributions to the Anderson Trust Fund, c/o Nancy Woods, Human Resources Dept., Ziff Communications, One Park Ave., New York, NY 10016.

Beta-Test Of New dBASE IV

Almost a year after the first version of the product was released, Ashton-Tate has begun outside testing of *dBASE IV* version 1.1. Given the late start, it is likely that a fully functional version of the program won't be available for at least four months. Ashton-Tate is releasing various beta versions in phases to different corporations, authors, and select end-users.

Last month's *MicroTimes* contained an incorrect statement about version 1.1. We said that the standard edition would not include A-T's bug-ridden SQL. In fact, it will (presumably with the bugs fixed); it will not include SQL Server. Thus, the standard edition, which can run on a 640 K machine, will have both the regular dBASE language and SQL; the Server edition (which requires an 80286 or 80386 CPU and a megabyte of memory) will allow other PCs to access databases through SQL requests.

The VAX 9000, on which DEC spent over $1 billion in research and development, allows current DEC users to move up to more powerful computers without having to switch to other manufacturers.

It is not clear (even to many people at Ashton-Tate) why someone would want to use the SQL language with *dBASE IV*, since the dBASE language is much more powerful and easier to use than SQL. In fact, many people would love to see SQL removed so that the program had more free memory and didn't take up so much space on the disk for people who never want to use SQL.

DEC Announces New VAX Mainframe

Competing with IBM is never fun, especially when you do it in a market of which IBM owns 80%. However, Digital Equipment Corporation decided to make a go of it with a new line of VAX computers that are as powerful as IBM's mainframes but run on existing VAX software.

The VAX 9000, on which DEC spent over $1 billion in research and development, allows current DEC users to move up to more powerful computers without having to switch to other manufacturers. This is DEC's second attempt at the mainframe market (unlike what most of the press said); its first, the System 20 in the early 1980s, was a costly and embarrassing flop. The VAX 9000 is a minimum of 30 times faster than DEC's VAX 780 workhorse with one CPU; with four CPUs, the machine screams at 100 times the speed of a 780. DEC emphasized that this performance was achieved in a system that is air-cooled and

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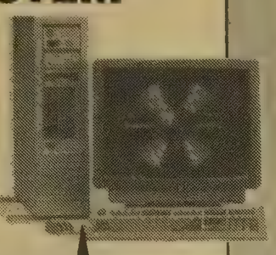

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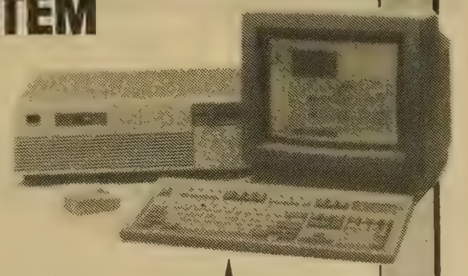

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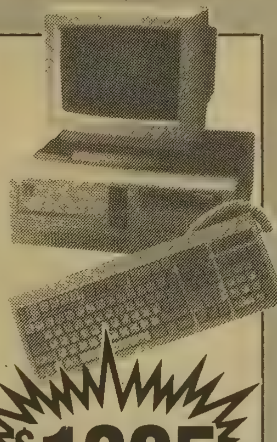

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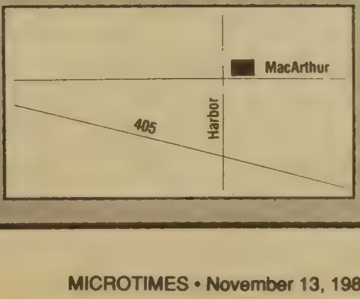

can work in a standard computer room.

The news was greatly appreciated by DEC's customers. DEC is now the only major company with an entire range of CPUs from micros to mainframes that can run the same software. It is expected that the existence of the VAX 9000 will help spur lagging sales of DEC's MicroVAX, the low end of the VAX line. Many DEC customers use MicroVAXes to create software that will work on the mid-range DEC systems; these will also work for the new high end. The new systems will begin shipping in the middle of next year.

The VAX 9000 incorporates a new, proprietary chip packing technology that DEC officially unveiled in September. DEC says that this new technology allows it to make circuit boards that are 30 times as dense as current boards. This allows DEC to pack much more power into a small area. The new boards use special board controllers that let the chips run faster and be closer together. DEC said that it has no intention of licensing this technology, for which patents have been applied, to any other computer manufacturer.

Major UNIX Workstation Manufacturers Finally Agree On Speed Tests

Until recently, every UNIX hardware manufacturer had a favorite benchmark test for showing how fast their system was compared to the competition. Of course, this made it almost impossible for potential buyers to compare systems, since no two benchmarks were the same.

Last month, the largest group of manufacturers ever agreed on a single suite of benchmark tests. A non-profit group, the Systems Performance Evaluation Cooperative (SPEC), announced the first version of the benchmark tests, which include tests for engineering/scientific programs. All results of the benchmarks are normalized against the VAX 780, a standard for mid-sized UNIX systems. The results, called SPECmarks, are the geometric mean of the ten tests.

SPEC marks the first time that all major players have agreed on a benchmark system. It consists of Apollo, AT&T, Control Data, Data General, DEC, Hewlett-Packard, IBM, Intergraph, MIPS Computer Systems, Motorola, Multiflow Computers, Stardent, and Sun Microsystems. Other major players, such as Sony, are also expected to use the SPECmarks in their advertisements and marketing literature. Future SPECmarks will address other parts of workstations, and a super-SPECmark may evolve.

The first set of results held few surprises. The major systems tested include:

System	**SPECmark**
MIPS M/2000	**16.5**
Apollo DN10010	**14.5**
Sun SPARCstation 330	**11.3**
MIPS M/120-5	**11.2**
DECstation 3100	**10.1**
HP9000 Model 834	**9.5**
MIPS RC2030	**9.3**
Sun SPARCstation	**18.3**
DECstation 2100	**7.5**

"The Organizer"—winner of the Paul Hoffman hype-of-the-month award.

Excel Not The Only Windows Spreadsheet

MarketMosaic, producer of the popular *Twin 1-2-3* clone spreadsheet program for MS-DOS, has introduced the first major competitor for *Excel* under *Windows*. *Twindows*, this month's winner for overly-cute software names, allows you to use *1-2-3* commands or normal *Windows* menus and dialog boxes. You can use the mouse or just the keyboard for commands.

Twindows will share data with other *Windows* applications through Microsoft's dynamic data exchange (DDE) and through the *Windows* Clipboard.

Mosaic emphasizes that *Twin* and *Twindows* have many features missing in *1-2-3* versions 2.2 and 3, including undo, better memory management, and links to external spreadsheets. Although it will be quite tough to compete with Excel's huge installed base, *Twindows* will appeal to *1-2-3* users who want to have keystroke-for-keystroke compatibility.

Getting Small and Smart: Hand-held Electronic Encyclopedia

Move over, mini-dictionaries: what the world really needs is a 6 oz., 20-square-inch electronic encyclopedia. The new device, expected to cost under $400, will be released after Christmas. It holds the entire *Random House Encyclopedia*, over 10 megabytes' worth of completely searchable text. The device will be produced by SelecTronics (makers of many hand-held text systems such as dictionaries and translators) and uses technology from Microlytics, a Xerox subsidiary. The Random House name and the novelty of having a completely cross-indexed system that you can put in your pocket or lunchbox should cause high initial sales of the unit.

Zenith Sells Its Computer Business To Groupe Bull

In the latest tale of international corporate mergers, Zenith got out of the computer market by selling its computer manufacturing group to European giant Groupe Bull for $600 million. The Zenith units were quite profitable and still growing, but the parent company wanted to get out of the highly-competitive field and focus on television and other consumer electronics.

Groupe Bull, known mostly for its minicomputers, mainframes, and software, will keep most of the Zenith line intact and will vastly expand Zenith's distribution in Europe. It will also use Zenith's large

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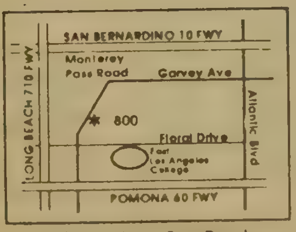

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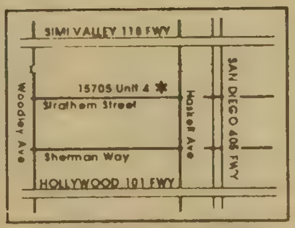

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NEWS
AND ANALYSIS

***Twindows*, this month's winner for overly-cute software names, allows you to use *1-2-3* commands or normal *Windows* menus and dialog boxes.**

installed base in the US as another foothold in the domestic market.

One area of special interest is government contracts. Groupe Bull has a large number of European contracts, and Zenith has been very successful in US contracts. The combination of the two will give Groupe Bull a significant advantage in bidding, since they will be a single source for the entire range of computers.

Worst Press Release Of The Month

Sure, every software and hardware company thinks that its new product is the greatest thing. Hell, some even think the world should stop when they release a new version.

This month's winner, however, wins the award for most hyperbole for the least important product. The founders of Kensington Microware have created a new company, CoStar, to create new and terribly exciting computer accessories. "We believe our team is uniquely qualified to conceive of and design the next generation of personal computer accessories. The CoStar products are unique, with great attention given to industrial design."

With such breath-taking prose, what could this company possibly do for its first product? A printer cart.

Actually, a printer cart called "The Organizer" (yes, they got a trademark for that incredible name), specifically for the Apple LaserWriter II. The press release assures us that the cart "is an exact match of the printer's design and aesthetics. Its functionality and beauty make it a welcome and useful addition to any office." Be still my beating heart.

This kind of prose is almost acceptable until you look at the enclosed glossy press photo and realize that the cart is a different color than the LaserWriter II and that it has a very different exterior. Essentially, the product is a rolling cart with four shelves that happens to hold something that is the same size as a LaserWriter II, and it only costs $300.

Software Patents Become Fodder For Lawyers

Quickview Systems, famous for threatening software developers over its patents for displaying parts of a database record, has now sued Apple, claiming

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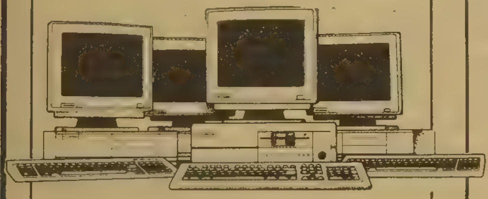

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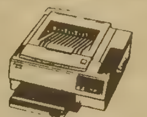

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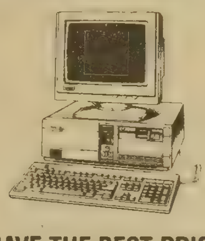

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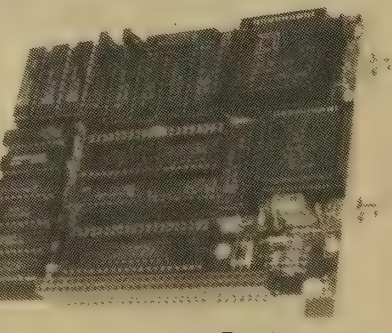

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NEWS AND ANALYSIS

that the widely-used *HyperCard* application infringes on its patents.

Apple in turn sued to overturn Quickview's patents.

Quickview president Paul Heckel claims that his patents cover any software that shows parts of a record in a database and then allows the user to reveal the rest of the record. *HyperCard*, of course, can do that, but can do almost anything else as well.

Apple is treating the case as a nuisance lawsuit and may decide to countersue to prevent similar suits in the future.

Most software cases are based on copyrights. Infringing software is accused of either stealing object code (the runnable part of the program) or source code (the human-readable basis for the object code). In the last few years, a third type of copyright infringement, commonly called "look-and-feel" theft, has also arisen.

Quickview's case is based on patent law. Quickview applied for, and received, patents on specific parts of its *Zoomracks* software, a package that has sold poorly since it was introduced in 1985. Heckel claims that parts of *HyperCard* infringe on his patent.

Apple can win its case by showing any one of three things:

•That Quickview's patents are invalid because the patent examiner should not have awarded the patents in the first place;

•That *HyperCard* does not do the things that are covered in Quickview's patents;

•That *HyperCard* does the same thing that is patented but does it using a different method.

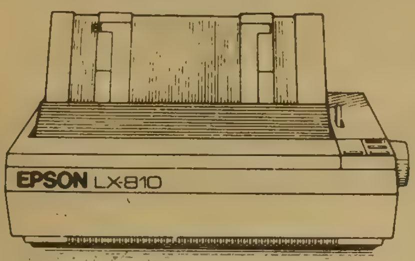
To get a patent, you must prove that the process you are patenting is innovative, is not obvious, and somehow advances the state of the art. The majority of patents that are tried in the courts are overturned.

To legally challenge *HyperCard*, Quickview must prove that *HyperCard* does exactly what is covered in Quickview's patents, and that it does it using the same methods. It is highly unlikely that Heckel will be able to prove this; it is more likely that he is simply hoping for Apple to pay him off to avoid the high costs of a lawsuit.

Bug In 80486 Chip Delays Shipment

Only weeks before Intel expected to begin quantity shipping, Compaq discovered a bug in the trigonometric analysis unit of the 80486 chip, forcing Intel to go back to the drawing board. This will delay the volume shipments by about two months and will dash the many manufacturers' hopes of showing shipping units at COMDEX.

The bug affects programs that use trigonometry, such as CAD programs and engineering software. IBM has been shipping 80486 add-in boards for over a month and will probably have to supply new CPUs for those boards when they become available from Intel. ■



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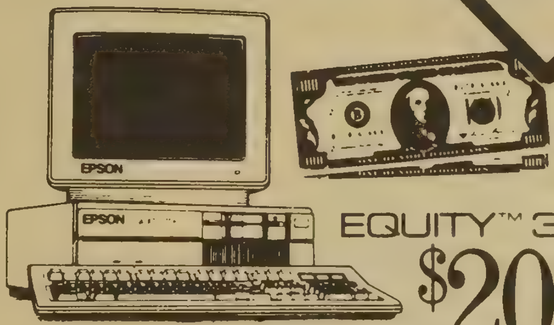

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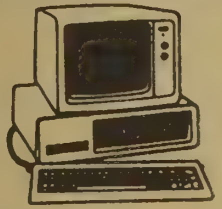

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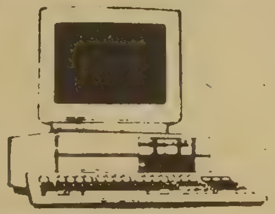

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Laptop Ideas, And A New Proposal For A Maturing Micro Industry

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Laptops And Keyboards

Fat-fingered folks, function-key fondlers and numeric-pad pounders often find laptop keyboards, uh, depressing.

As a solution, Paul Wolborsky of Fairfield suggests folding keyboards. Fold over the numeric and function keys when closing the laptop. For use, unfold and lock in place, providing a robust keyboard.

Umbilicals For Quiet & Convenience

As laptops become more widespread, so do complaints about their use—noisy use—in meetings. Audio feedback is a sound typing aid, but silent keyboards are sometimes needed.

A pluggable laptop keyboard would allow a quiet keyboard to be offered as an option. Then, other keyboards could also be options—alternative keyboard layouts, Dvorak keyboards (not named after the Big John), special-applications, etc.

Also: Keyboards on umbilicals can be positioned as desired, without having to move the display. Compaq's laptop incorporates this convenience—and their keyboard can remain in the box for use in close quarters, or be removed and moved around on its umbilical when space permits.

Closing Thoughts On A Laptop

To allow maximum-sized displays, hinge the top at the back, not in the middle as some do. Once open, all but a tiny perimeter should be the display, not a small display inside a big top as some do. That's like putting a tiny shrimp cocktail inside those big, mostly glass serving bowls.

Wolborsky also suggested embedding solar cells in the laptop top. Batteries could get a charge out of that!

To cut weight and bulk, he proposed making keyboards as thin plastic plates, with embedded or engraved wiring.

Also, he requested removable keycaps with options available, such as higher or lower special keys, special symbols, etc. Hot Dang! Let folks program their machines, an' they start wantin' to change the hardware to meet their personal preferences!

About The Computer Faire

John Dvorak is often accused of sleazy gossip, rumor mongering, and personalized bitching and moaning. But sometimes I agree with him:

After last Spring's Computer Faire, he titled his show review; "Time to Fix the West Coast Computer Faire—It's Broken." (Note: I am asking that my bio, below, no longer mention that I founded the Faire. Ol' timers, who know how exciting it once was, probably know I ran it, 1977-1983. And I'd just as soon that newcomers not associate my name with more recent Faires.)

Last spring, the Faire was held in San Francisco's Civic Auditorium and Brooks Hall—jus' like the good ol' daze. But, when I arrived, I found the Auditorium an echoing emptiness, used only for some tech talks. It was a stark and depressing contrast to the ecstatic chaos of multitudinous micros and massive mobs, sardined there during the first eight Faires.

Even worse, when I went underground to the exhibit area, I found it only part-filled. In fact, I toured the entire exhibition in under two hours—including several leisurely conversations with old friends. Now, you gotta understand—I'm a hardcore technojunkie, inevitably intrigued by innovation. It's hard for me to get in and out of just a computer store in less than two hours.

Frankly, I was surprised when the Faire organizers called, inviting me to again be listed on their Program Committee for 1989. After last Spring, I had rather assumed it was their last Faire. (I declined their invitation. In previous years, I found that the Program Committee—with its many impressive names, including Dvorak—was encouraged to propose topics and speakers, but had little control over the selection or quality of those chosen.)

A Microcomputing Association And Convention

Microcomputing's overdue to have its own industry-wide organization, and association-owned, nonprofit convention. Consider:

- There are major threats of legislative stupidity and self-serving manipulation by powerful players. Yet no recognized, unified industry voice counters such intrusion.
- Various standards are needed, benefiting industry and users alike. But they are being developed—if at all—by numerous groups, organizations and companies. Sometimes they are contentious, sometimes competing, and sometimes self-serving to the detriment of nonmembers. Participation therein is time-consuming and, too often, redundant.
- The industry/user community is now robust; technical development and applications continue to accelerate. Yet no single event is recognized as the definitive opportunity for professionals to confer on the state of the art.
- Manufacturers could benefit from a major exhibition that is nonprofit, and under their control.

Consider numerous successful models: The semi-annual Consumer Electronics Show greatly benefits consumer electronics manufacturers, dealers and practitioners—industry-owned and industry-run. The National Computer Conference, and the Joint Computer Conferences preceding it, did the same for the "big" computer industry and traditional computer professionals—until AFIPS members became unresponsive. (The American Federation of Information Processing Societies owned and operated the NCC.) Wescon, serving the western electronics industry, is a joint effort between the IEEE and a trade association. The Institute of Electrical and Electronics Engineers' western sections run Wescon's conference programs; the electronics manufacturers' trade association runs the exhibition.

A microcomputing association and association-run conference and exhibition could be beneficial to professionals, serious end-users and the microcomputing industry—and, believe me, it could be self-supporting.

Quickies

Nobel Peace Prize winner Oscar Arias, President of Costa Rica, visited Silicon Valley in September. He wants high tech development in his country—for more than a century, one of the most stable democracies in the Western Hemisphere. (Must we channel all our offshore loot to Taiwan and the Orient? Costa Rica flights are shorter, prices cheaper, and scuba-diving's great.)

For defense industry employees: Rumor is that some Department of Defense wheels are increasingly concerned about Russia becoming such an unreliable enemy with all this glasnost going around. And an 8/89 poll by the Washington Post and ABC showed "the military" was the government budget area where respondents most wanted reductions.

Gallager recently observed that our federal legislature is called "Congress" rather than "Progress"—and suggested that accuracy requires the spelling to be "burrocrats."

Standing On One Another's Shoulders

Send suggestions to Jim Warren, Realizable Fantasies, 345 Swett Road, Woodside, CA 94062. Published proposals will be attributed to their authors unless anonymity is requested. ■

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Jim Warren founded the Silicon Gulch Gazette *and* Infoworld *newspapers, Video Initiative and the DataCast proposal for broadcast-based paperless electronic newspapers utilizing personal computers. He was the founding host of the PBS* Computer Chronicles *series, founding editor of* Dr. Dobb's Journal, *and founding president of the Microcomputer Industry Trade Association.*

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Tales From The Quake: The Industry Pitches In

Checking around Northern California, we encountered varying reports of damage or miraculous escape among hardware and software companies, and swift offers of help and large donations to earthquake relief from around the industry. As the rebuilding begins and the industry returns to a semblance of business as usual, here are some anecdotes and tales of technology to the rescue.

—*Mary Eisenhart*

In The Shadow Of The Cypress

When the Cypress structure collapsed, says Don Sanguinetti, it was literally impossible to see the freeway from across the street for the cloud of dust.

Sanguinetti, co-owner with his brother Daniel of PC Professional, Inc., should know—at the time of the disaster, he, his brother, and 14 other personnel were in the company's Cypress Street headquarters.

PC Professional employees were among the first on the disaster scene, assisting with the rescue of trapped motorists. "The quake hit hard and fast, and we had to think on our feet," said Daniel Sanguinetti. "Until police learned of the Cypress disaster, we were the only available help for those trapped in cars."

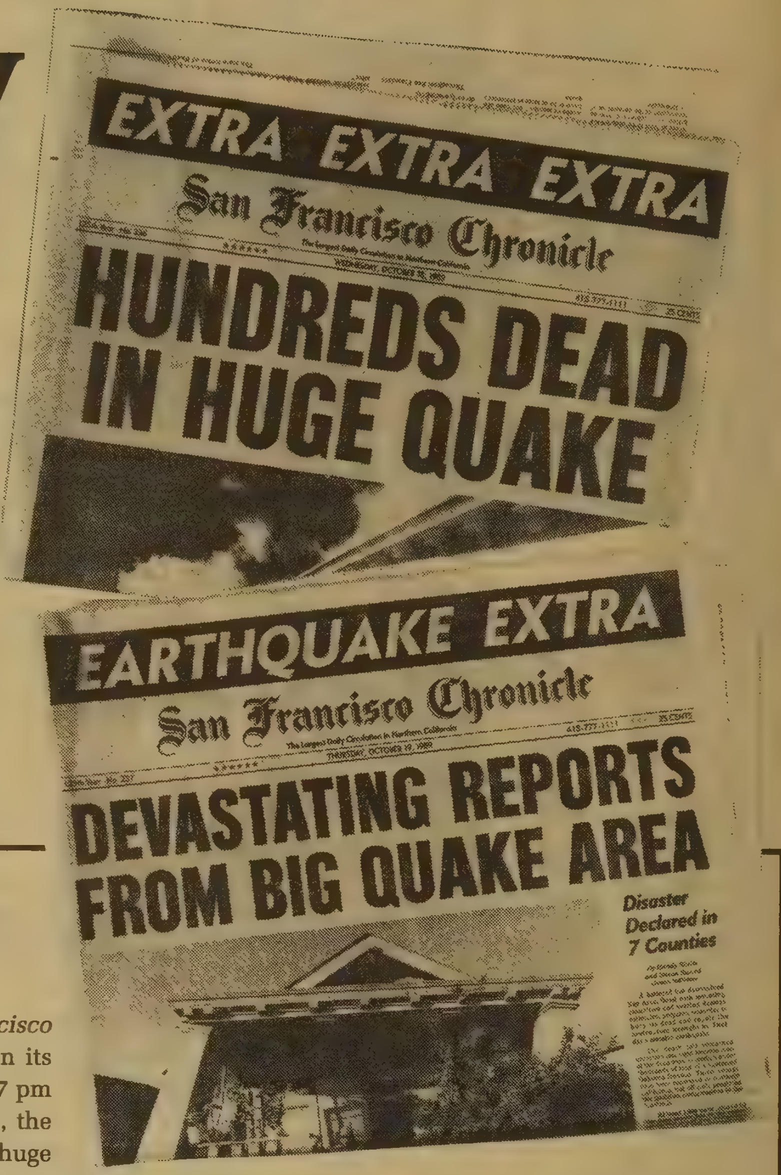
"The quake hit hard and fast, and we had to think on our feet..."

When the quake hit, the store immediately lost power and became a nightmare of screeching power-supply alarms, falling monitors and tumbling bookshelves. Daniel Sanguinetti actually saw the collapse of the freeway structure across the street from his storefront. Everyone immediately rushed into the street. "The first thing we saw was a car that had fallen off the top deck. It was on fire, and we managed to get that person out of the car," says Don. The PC Professionals were also able to rescue

Macs To The Rescue At The Chronicle

At 5:04 pm on October 17, the *San Francisco Ghronicle*'s October 18 edition was well on its way to completion in plenty of time for its 7 pm first edition deadline. When the quake hit, the *Chronicle*'s building lost power, bringing its huge mainframe to a halt.

According to art director Hulda Nelson, the contingency plan for such unexpected interruptions calls for the *Chron*'s staff to move operations to San Jose, to the offices of the *Mercury-News*. And in the ensuing chaos, the *Chronicle* did manage to get a bus to the office door in San Francisco before it became obvious that it wasn't practical to use the freeway to get anywhere that night.



EXTRA EXTRA EXTRA

San Francisco Chronicle

HUNDREDS DEAD IN HUGE QUAKE

EARTHQUAKE EXTRA

San Francisco Chronicle

DEVASTATING REPORTS FROM BIG QUAKE AREA

Disaster Declared in 7 Counties

The Chronicle's Mac-produced disaster editions. Early reports put the death toll in the hundreds; officials later lowered it to 65.

"So about that point, which was about 9 or 10 at night," she recalls, "we decided to try to power up the Macintoshes using generators." There are several Macs in the art department at the *Chron*, and normally they're used for graphs, charts, headline type, and designing the cover of the Sunday *TV Week* magazine.

"Somebody somewhere found generators that they could rent and bring in here," Nelson says. "Late that night some of our electricians brought a generator up and put it on our fire escape. After tinkering around with that for an hour or so, we were finally able to get five Macintoshes running."

Meanwhile, downstairs in the darkened building, flashlight-wielding *Chronicle* reporters were furiously typing away on their Tandy laptops. One of the Macs had a modem, so the stories went to that Mac (a fact made possible because while the power-consuming state-of-the-art phone system went down right away, a few AT&T fax and phone lines stayed in service).

"As the stories came in, we put them on floppy disks, and then walked, distributing the stuff to the other Macs that were operating. One we used to do maps, one we used to do headlines, and the other two we used to put the stories into *Quark* and style the type so it looked like *Chronicle* type. And then we just outputted it—we'd also powered up a Varityper," Nelson explains.

In another triumph of disaster-driven DTP, the intrepid art department powered up their Canon laser copier and used its fine-photo setting to generate a facsimile of halftones. "They turned out surprisingly well," says Nelson.

The morning after the disaster, the *Chron* was able to distribute over 600,000 copies. The next night, it was Mac to the rescue again: "We had more stories and more generators, more power, so we were able to power up the whole Macintosh system. All of our Macs were up and our file server was up, so it was a lot easier because we no longer had to be running around with floppy disks.

"We had a little time to play on the second night," Nelson says, by way of explaining the larger and more finished October 19 edition. "The first night was just a total ad-hoc seat-of-the-pants kind of deal."

In words echoed in various forms around Northern California, she laughs, "It was exciting."

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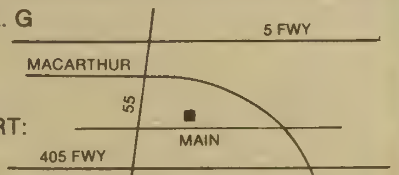

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Vendors Offer Help In Recovering Lost Data

As the Red Cross developed an urgent need of technical support, database work, and other computer-based assistance in the wake of the disaster, both individuals and corporations from around the industry responded with donations of time, work, and money.

As it became apparent that one of the quake's long-term effects was an untold amount of lost and perhaps irretrievable data, several companies in the data storage and retrieval industries offered assistance.

SitBack Technologies, publishers of *SitBack* backup software, and Polaroid's Magnetic Media division (which includes attempted data recovery in its diskette warranty) teamed up to offer a special package to users—*SitBack* software and Polaroid diskettes. Additionally, they announced that 10% of all sales generated from the combination package between now and November 30 will be donated to the Red Cross, and that they will be collecting money for the Red Cross at their COMDEX booth. (Call 415/644-3837 for further information.)

...one of the quake's long-term effects was an untold amount of lost and perhaps irretrievable data...

Meanwhile, in response to the data-loss problems of organizations across the Bay Area, San Diego-based Prime Solutions offered to send, at its own expense, teams of engineers and disk drive technicians to the site of any Northern California government agency or nonprofit organization involved in earthquake relief which suffered earthquake-related computer equipment failure. Agencies whose PCs lost data or suffered disk crashes are invited to call Prime Solutions at (619)274-5000.

several other victims, though Don sadly reported that not all the people they pulled from the wreckage survived—from one particular van, they only managed to save five of the eight passengers.

"I didn't think any help was coming," he says, noting that the Cypress collapse looked like the end of the world and it seemed reasonable to assume the rest of the Bay Area was in the same condition. "People were just helping where they could," organizing into small teams and offering whatever aid was possible. When professional rescue workers reached the scene, the PC Professional employees continued to work at the disaster scene.

Though forced from its Cypress Street location by the collapse, PC Professional continued to offer uninterrupted service and support to its customers from temporary quarters, and can be reached at (415)253-0152.

Low Impact In Mountain View

According to Kim Miller of Sun Microsystems, the workstation company sustained very little damage or interruption of operations. The Mountain View buildings had no structural damage and never lost power; the Milpitas facility temporarily lost power and was closed for one day for inspection.

Wendy Hasler of Silicon Graphics reports that while the quake was certainly dramatic out on the landfill by the Bay, it caused no production delays or other serious problems. Indeed, the company was able to have its scheduled board of directors' meeting the next day, and announced that its earnings were up 95%.

Sun Microsystems sustained very little damage or interruption of operations...

Like many companies, Silicon Graphics made a considerable donation to the Santa Cruz Red Cross for earthquake victims; in addition, it set up a crisis center onsite, offering emotional support, legal and financial advice, and other services to quake victims, SGI employees or not.

Remote Phone Service Gives Schwab The Edge

The day after the Almost Big One, the only stock brokerage in San Francisco able to keep trading was Charles Schwab & Co. While the local phone system was only sporadically functional, the broker's contingency plan, developed with American Teleconferencing Services of Overland Park, KS, used audio conferences to back up disrupted voice and data links.

In Kansas City, Schwab's crisis team was able to bypass the still-shaky San Francisco phone system...

ATS established a single-line link from San Francisco to its switching center in Kansas, then set up a conference call for the use of Schwab's branch managers around the country. In Kansas City, members of Schwab's crisis team were able to bypass the still-shaky San Francisco phone system and enjoy clean, uninterrupted phone service.

Additionally, a second audio link provided backup for the computer-based trading system. Audio conferences were established for each of the six types of securities Schwab trades; while brokers were able to use backup computer services for most types of transactions, they were able to fall back on audio quotes and orders to complete several mutual funds trades. ATS, which provides ongoing audio conferencing support for training and interoffice communications, had employees in Kansas working around the clock keeping Schwab's communication links running. (ATS, 913/661-0700.) ■

TurboQuake At Borland

Located close to the quake's epicenter in Scotts Valley, Borland International didn't fare quite so well. While escaping loss of life and serious injury, Borland employees still had to contend with quite a few problems.

According to Judy Roberts at Borland, the executive building, one of two identical structures side by side on the site, was condemned, and employees found themselves doubled up in the surviving building. In addition, there was heavy damage caused by the breaking of the building's main water line—the flooding ruined a good deal of equipment and many data files were lost.

Nonetheless, the company was up and running with amazing speed. Roberts has high praise for the phone company, which had lines working within three or four hours of the quake. President Philippe Kahn, on a promotional tour in Australia when the temblor hit, was on MCI three hours after the disaster and communicating with all the company's executives.

And, she says proudly, *Quattro Professional* started shipping on October 30 as scheduled.

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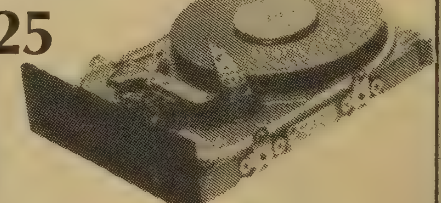

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And once again, we need your help, because, bombarded as we are by press releases, media events, and the like, we aren't always in a position to know about wizards behind the scenes, personal tales of extraordinary achievement, and insufficiently sung heroes. So if there's someone you think should be on this list, do not rely on our highly inadequate powers of telepathy—use this form to fax or mail us your suggestions, or send them to us at any of our various electronic addresses: **microx** on **The WELL** (415/332-4335), **MICROTIMES** on **MacNET**, or **{pacbell, hplabs, ucbvax, apple}!well!microx** on uucp.

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We must receive your information no later than December 1.

Please feel free to attach additional pages if necessary.

—*MicroTimes Editors*

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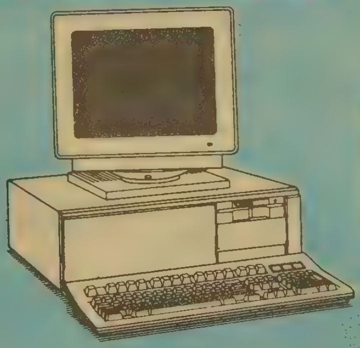

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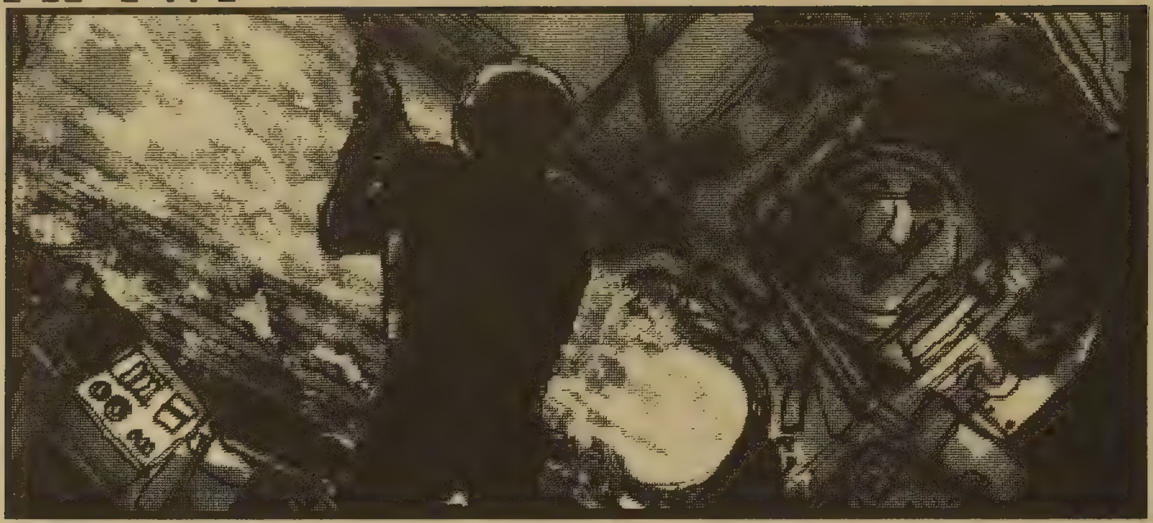

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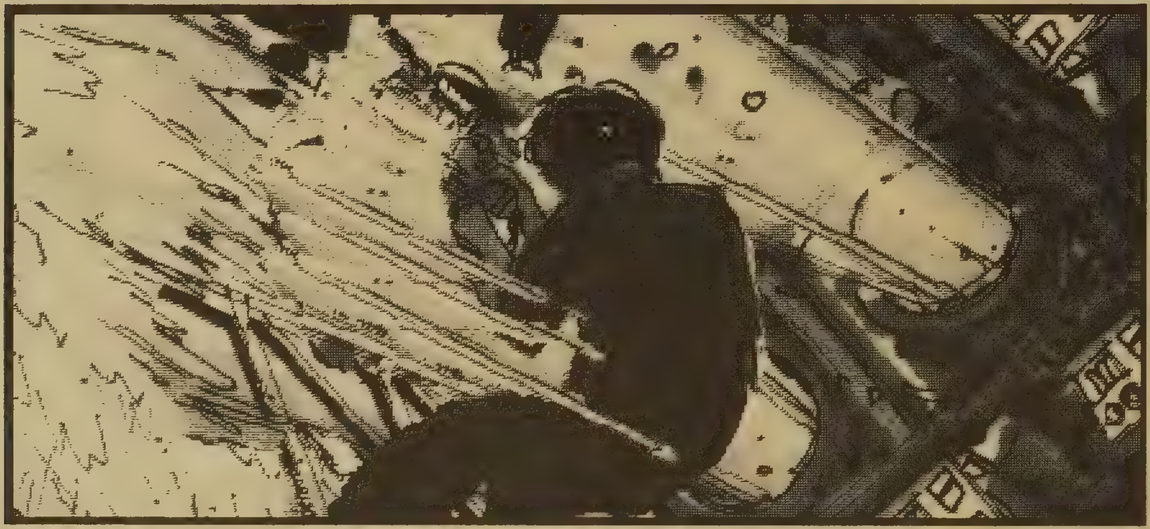

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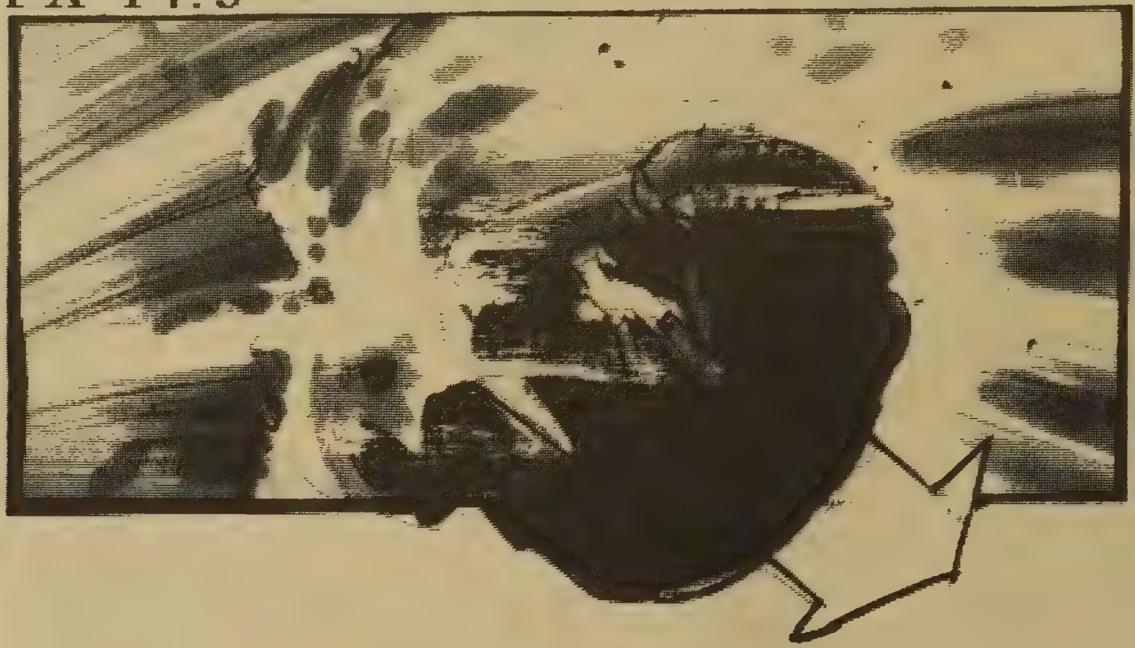

The Mac II, in conjunction with scanners and software, was used to create storyboards for "The Abyss."

Mac In Film Production: First Results

By Richard P. Greenfield

The summer of 1989 will be noted not only as the most financially profitable in Hollywood history, it will also be noted for the release of the first films that used the Mac extensively in various production tasks outside of the established areas of scriptwriting, budgeting, and scheduling.

Two of the summer's most ambitious releases, *Star Trek V* and *The Abyss*, used and attempted to use Macs for a variety of tasks involving special effects planning, execution, and production design. The experience of the crews on these two films highlights strengths and weaknesses and points out directions of future development if the Mac is really to become a totally integrated production tool.

The Abyss

Mike Backes was the Macintosh consultant for *The Abyss.* A former production executive at Vestron Pictures, he is currently working on a techno-thriller script and serving as a consultant to the Advanced Technology Group at Apple. Backes had been a Mac user for five years before he was approached by *Abyss* director-writer Jim Cameron.

Cameron hired Backes in December 1987 to work on visuals for 2-D storyboards and 3-D animation. "We got an alpha copy of *Super 3-D* and took Ron Cobb's drawings for *Flatbed* [the minisub] and the USS *Montana;* we made models in *Super 3-D* and did some animations with it," Backes recalls. "That stage was kind of rough...the version of *Super 3-D* had no real in-between capability; it was difficult to define a motion path. All that had to be done by hand using *Excel.*"

Storyboards for *Abyss* were scanned in, using an alpha copy of *Digital Darkroom* and a Microtek scanner. *PixelPaint* was used to give shading to break the storyboards up into categories. "We had 'wet for wet' pictures, those where the underwater photography was done of underwater miniatures, and 'dry for wet' where we had an underwater look." At this point, Backes was able to obtain a printer from Tektronix which allowed clear storyboards to be printed for all special effects teams.

Says Backes: "The Mac is a phenomenal computer for screenwriting, budgeting, and breaking down a script, but it is just now becoming an inexpensive visualization tool. When we first started with the Mac II, it was an expensive visualization tool. Now the hardware's cheaper. The next movie I do with a Mac II visualization base will be very cost-effective."

Van Ling worked with Backes and

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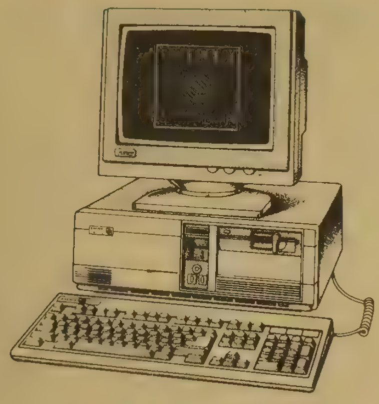

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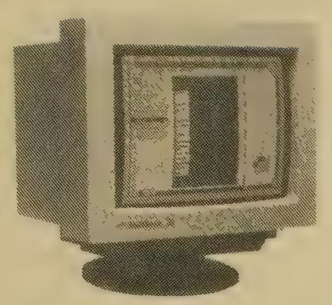

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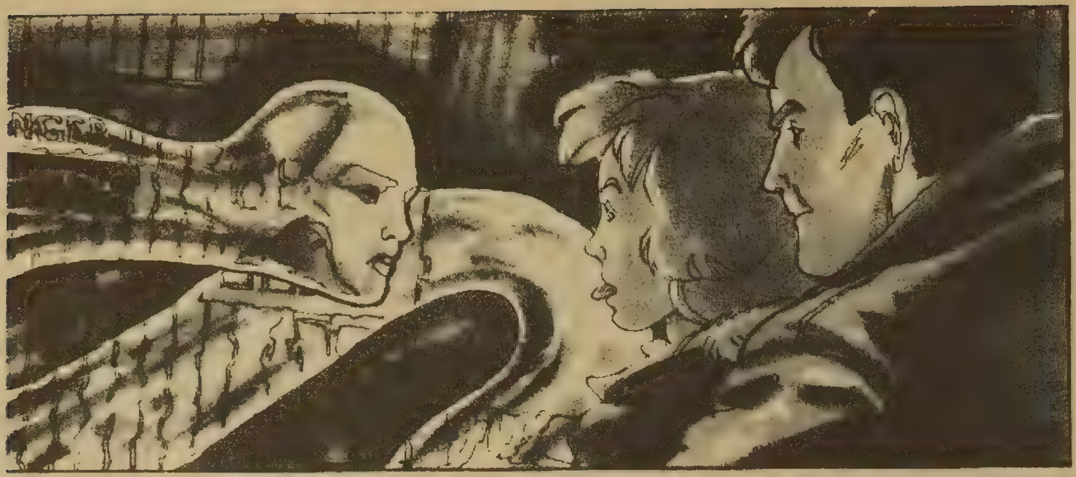

Using the Mac as a visualization tool allowed the relatively inexpensive creation of detailed storyboards.

as director Cameron's assistant on the film. Ling processed all the storyboards. "The trick is to see what the technology can do, see if you can push the envelope back a bit, do some exploring," he says.

Star Trek V

Ralph Winter, executive producer of *Star Trek V*, and his crew also used the Mac, but with mixed results, notably in special effects and production design.

"In special effects," he recalls, "we were able to use *VideoWorks II* somewhat successfully to give life to otherwise static storyboards; that process showed us we had one shot too many at one point, and at $25,000 per shot it paid for itself.

"Moving beyond that, however, it was not easy to get things to life, and what we had wasn't true 3-D. It couldn't really show us all the perspectives when the shuttle was entering the *Enterprise* landing bay." The sequence required Winter to design a shot so that only the rear part of the landing bay had to be built, rather than the whole model.

Lynda Weinman, who did the animated storyboards for Winter, adds, "Another thing we ran across was that the animations, even with the *VideoWorks Accelerator*, were not in real time."

Production design was another problem area for the *Star Trek V* crew. Explains Winter: "For those opening scenes, we went to Yosemite and shot Bill Shatner at a place called Tunnel View. Then we found a spot at one of the parking lots where we had a beautiful view of El Capitan and Half Dome, and we wanted to build this fake wall there, in the parking lot, a 20' x 40' wall.

"We would like to have used some kind of 3-D software to try out field of view, width of lens, that kind of thing, so that we would know to build a 17' by 38' wall, or something like that. But the software that was available to us wasn't workable by me alone. To really get it rolling you have to hire a wizard, and then the studio comes back with 'You want to do *what*? We'll send you some wizard craftsmen and they'll build you a wall however and wherever you want it.'"

Despite his dissatisfaction with what could not be accomplished, Winter says that in his next film he'll see if anything better is available. "What I would really like, what I assume everyone in the business would really like, would be some way to do the previews, and spit them onto film with appropriate commands to manipulate real-life cameras and models."

What's Needed

Ron Cobb, who did the initial renderings for *The Abyss* and who has since done work (some of it on the Mac) for the upcoming *Total Recall*, agrees with Winter. "We really are still pushing the edge; there are lots of things we need."

Despite the problems encountered, there was general agreement among these film professionals that use of the Mac had pushed aspects of production work forward. And, in relation to the expressed wish list, the first installment may come before the end of 1989. Programmer David Smith is working on a 3-D modeling program called *Walk-Through* which will run real time and support 256 colors. ■

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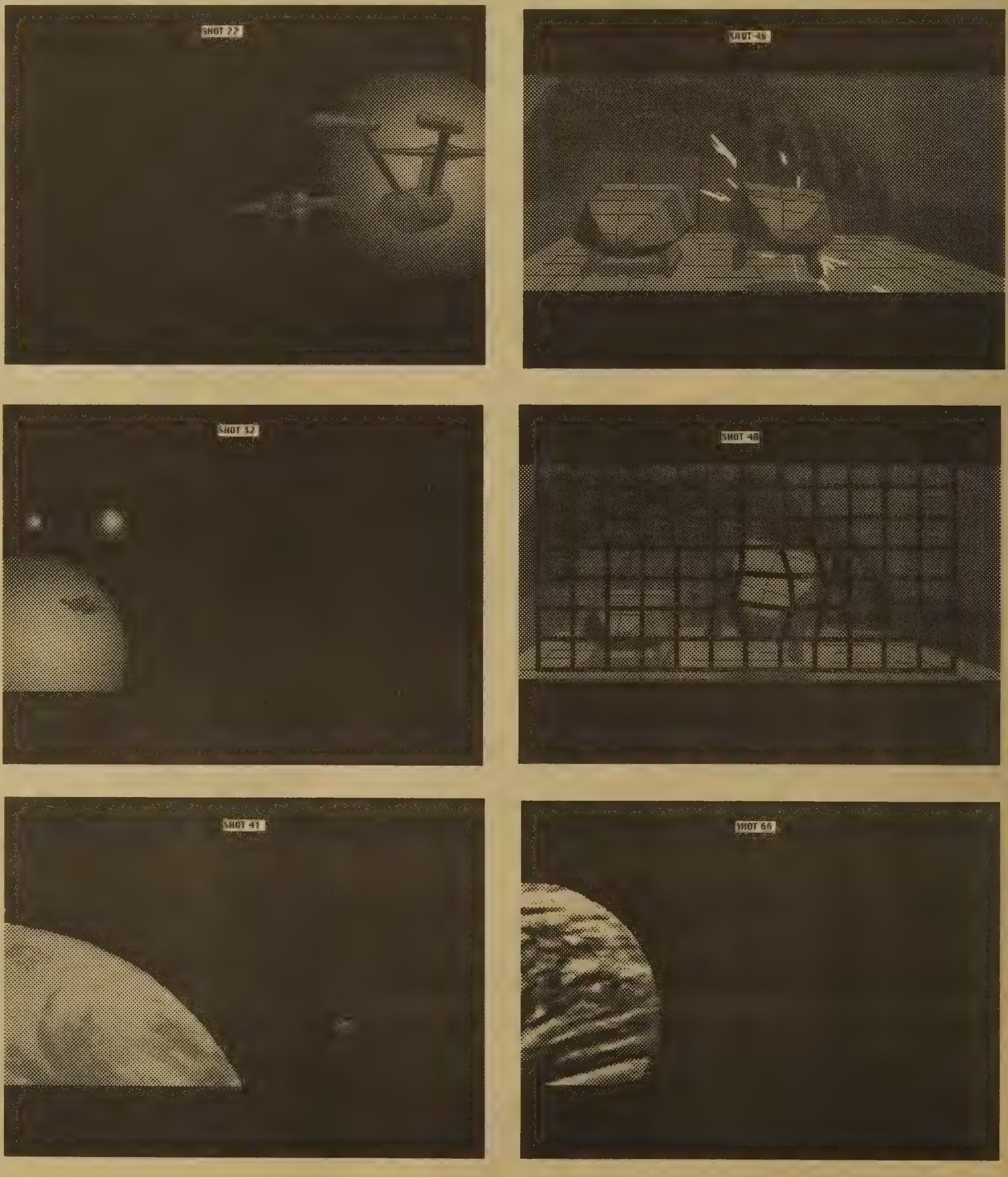
Using Video Works II, executive producer Ralph Winter was able to create animated storyboards for special effects.



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Updating An AT-Class Computer

By Ed Kahn

Many AT owners are now asking if it's time to trade in their workhorse for an 80386-based machine, or whether there are still more good years of service left in the old box.

With the introduction of the AT in 1984, IBM launched the computer that has become the backbone of the business world. Since then, clones and add-on products for the AT and its compatibles have flooded the marketplace.

This new line brought a number of advances over the older XT family of computers. The AT incorporated an 80286 processor, which provided significantly faster operation, and introduced the high density 1.2 Mb drive. Despite the number of newer and faster computers, there are literally millions of AT-class computers in operation.

Since the introduction of that landmark product, however, there has been a flood of larger, more complex programs that have put increased demands on the AT. The result is that many AT owners are now asking if it's time to trade in their workhorse for an 80386-based machine, or whether there are still more good years of service left in the old box.

Buyers would undoubtedly choose to outfit their AT-class computers differently if they were starting from scratch today. This article will address several major concerns that make AT owners think about moving up to a newer and faster unit.

The first consideration is the disk drives themselves. The new computers come with dual density drives in your choice of 5 1/4" and/or 3 1/2" format. A second area of concern is graphics standards. Many of the older computers came with either monochrome, CGA, or EGA graphics systems. New units utilize, for the most part, the clearer VGA graphics standard. A third area of concern is the 640 K barrier. And finally, more powerful interfaces and better keyboards, faster modems, and newer versions of DOS are available today.

Floppy Drives

Drives have advanced significantly since the first ATs. The original 1.2 Mb drive that came with the AT would read both high density and 360 K disks, but would write only to the high density floppies. For that reason, the original ATs came with both a standard 360 K and a high density 1.2 Mb drive.

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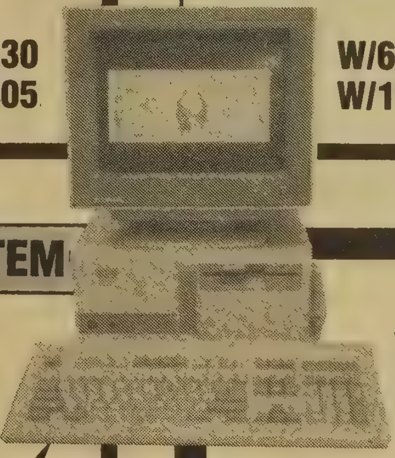

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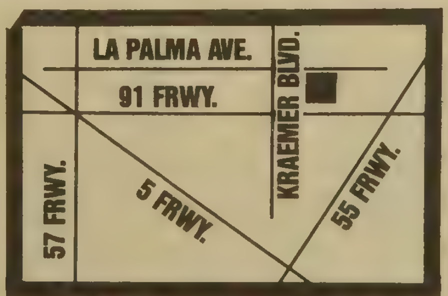

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available on 5 1/4" drives. So today there is no need for two 5 1/4" drives, as one dual density model will do the trick.

The other change that has taken place in floppies since the introduction of the AT is the emergence of 3 1/2" disks as a new standard. IBM moved away from the 5 1/4" disks when they introduced the PS/2 line a couple of years ago. This, plus the fact that most laptop computers are using the smaller disks, has made the 3 1/2" disks an increasingly prevalent standard. For this reason, many users are finding that they would like to have drives in both the 3 1/2" and 5 1/4" format on their system.

The smaller disks also come in both a standard density of 720 K and a double density of 1.4 Mb. If you are upgrading your floppy drives, you might consider replacing your drives so that you can use both sizes and both densities. The new drives will cost about $200 for both. You should be able to use the same controller as you had on the original AT. You will, however, need to upgrade to at least DOS 3.3 in order to use the 1.4 Mb 3 1/2" disks.

If you are handy, installing new drives is not difficult. If you don't feel comfortable making the change, you can easily have both drives installed by a store that sells you the replacement units.

VGA Graphics

Another major area of improvement is in graphics standards. The original IBM graphics standard, CGA, is pretty much a thing of the past for users who install color monitors today. The earlier standard is simply too difficult to view for long periods of time.

While many portables still utilize this standard for external monitors, anyone who is upgrading an older desktop computer with a new graphics card and monitor should move directly to the VGA standard. This will involve the purchase of a new graphics adapter card and a monitor that will accommodate this higher resolution.

There are a number of products in both of these categories that will do the job. I really like the ATI VGA Wonder (street price about $300) graphics adapter card. During the last few years ATI has made a name for itself through the introduction of excellent products at reasonable prices. This card is unique in that it will work not only with any software and any monitor, but it also has a mouse port and comes with a Microsoft compatible mouse. ATI figures that anyone who uses graphics will need a mouse, so why not include it? This saves an expansion slot or a serial port.

> *While many portables still utilize the CGA standard for external monitors, anyone who is upgrading an older desktop computer with a new graphics card and monitor should move directly to the VGA standard.*

While the card will work with any software and any monitor, it obviously will not deliver resolution beyond what your monitor can support. It will, however, eliminate any hardware or software compatibility problems. This card is really a delight, and is so simple that all you have to do is plug it into a slot in the computer and attach the monitor to the port on the card. The card will automatically sense what kind of monitor you have and configure itself. There are no switches or jumpers to set.

It doesn't get simpler than this, but nevertheless the documentation is complete, and tells you how to get the maximum performance out of the card with specific software. There are drivers, for instance, for *Lotus,* that will allow you to view 132 columns on the screen.

The least expensive way to move up to VGA is to use a VGA card and a VGA monitor. I think, however, that for many users it is worth the extra money to buy a multiscan monitor; they are designed to work with different graphics standards, and when the next one comes along the monitor will probably still work. I am currently using a Mitsubishi Diamond Scan 14" monitor that boasts autotracking. This monitor will work with CGA, EGA, PS/2, VGA, and even Apple graphics standards. Had I purchased an EGA monitor several years ago, I would now have to abandon it in order to move up to VGA, so in the

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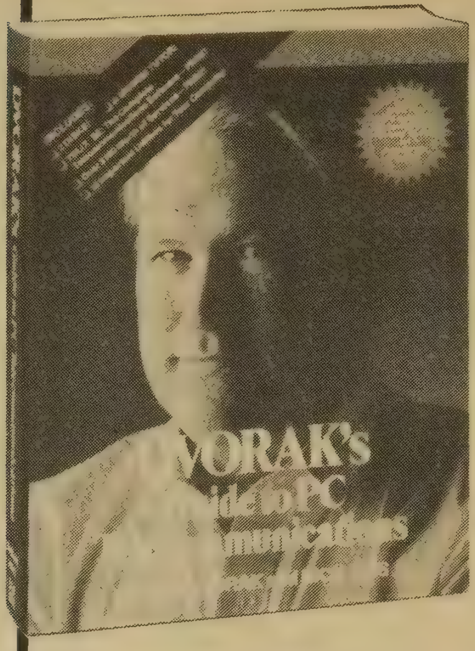

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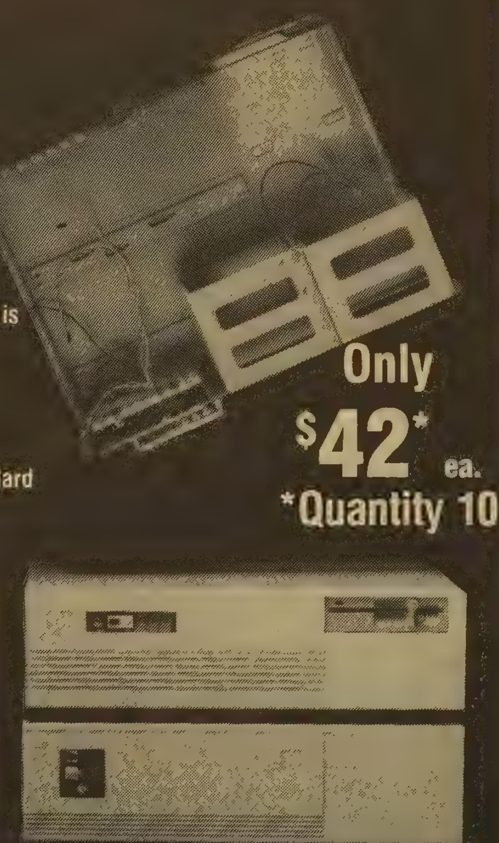

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long run it has been cheaper to buy the more expensive monitor.

On the other hand, there are many bargains in the less versatile monitors, and the display will be the same.

The 640 K Barrier

When the IBM PC came out with the ability to handle up to 640 K, that seemed like a lot. But programs rapidly grew in size, and this limitation soon became a real problem for users and programmers alike. Especially troublesome were large spreadsheets, databases, and graphics-intensive applications.

Over the years, a number of fixes were brought to market to allow programs to draw on additional memory for the smooth operation of programs that simply cannot be contained within the 640 K area. Standards were established and built upon over the years. In order to achieve maximum usefulness, additional memory must conform to the LIM (Lotus-Intel-Microsoft) 4.0 expanded memory specification—the most advanced LIM standard to date. This hardware standard, to which application programs are written, assures that the programs can use this additional memory.

If you have *extended* memory in your system, it does not conform to this standard and will do you little good except for running things like print spoolers, RAM disks, and caches, all designed to speed up operations. In short, extended memory is not an extension beyond the 640 K barrier. This memory will not allow you to run larger programs and will not help in the use of memory resident programs (also known as TSRs for Terminate and Stay Resident); these have become popular because they stay in active memory and are available at the touch of a hot key that calls them up anytime, regardless of which other application is running in the foreground. Popular as these TSR programs are, they compete with application programs for scarce conventional (under 64 K) memory. Larger application programs and the growing number of memory resident programs that we couldn't live without led to the development of LIM (Lotus-Intel-Microsoft) 4.0.

The fringe benefit of this ability to harness more than 640 K is that when coupled with a fast CPU, multitasking—running more than one program at a time—becomes a real possibility. This means that you can run your communications program, and while a file is uploading or downloading, you can move over to your word processor or any other application, and continue work while the download happens in the background. When a favorite bulletin board is busy, I leave it retrying in the background until the line answers. When I hear the modem or the computer issue its signal that the line has answered, I hit a couple of keys to move back to the communications window. The possibilities are endless.

But the prerequisite to any of this excitement is to have enough memory configured as LIM 4.0 *expanded*—not extended—memory. You need more than just memory, however, to make all of this work. You need a memory manager, which is software that tells your computer that there is additional memory available and that it is configured in a specific way.

Installing the driver involves nothing more than copying a file onto your hard disk and adding a line to your config.sys file. The memory managers that unlock all of this power are set up to manage memory configured according to LIM 4.0, which has become the standard to which software developers as well as hardware designers all conform. While the development of this standard did not solve all of the 640 K barrier problems, it went a long way towards stimulating the development of solutions.

So, if you have an AT-class computer with nothing more than the maximum 640 K conventional memory, and want to unlock all of this power, what do you do? There are several options available.

Before making any decisions, it is important to know if you have any extended memory in your system. If you have a big investment in extended memory, you might act differently than if you have only 640 K or less filled out. If you have enough memory, but it simply is not configured to the LIM 4.0 specification, the solution will be different than if you have no additional memory. Starting from scratch, this additional memory most conveniently comes on an add-in board that will slip into an expansion slot of the AT.

These boards will generally hold up to several megabytes of memory. With an expanded memory board, and the driver installed, you will be able to accommodate larger programs, like huge spreadsheets, desktop publishing applications, or CAD applications that are written according to LIM 4.0.

If you have a computer with 1 Mb of memory, this means you have 360K in addition to the basic 640K of conventional memory. Can you use it? If you have a 2 Mb system, is the additional megabyte available? Is it necessary to throw away all of this memory in order to take advantage of LIM 4.0?

Over the years a number of fixes have been brought to market. There are several software packages de-

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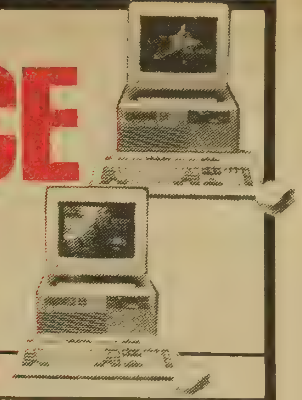

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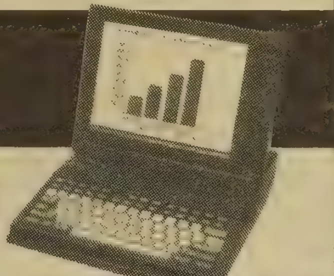

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signed to convert standard extended memory into expanded memory that conforms to LIM 4.0.

One such product, *Turbo EMS* ($99), is a software package that claims to be able to make all available memory conform to LIM 4.0. In checking out the product, I found that it did what it claimed to do, which was not entirely what I had hoped it would do. It did configure additional memory as expanded memory. Furthermore, it was even able to use available hard disk space as expanded memory. But that additional memory is slow, because the information must come from the hard disk, rather than memory itself.

If, however, you have a lot of extended memory free, data stored there will be rapidly accessed. The cost of a software emulator is a good deal less than the cost of an add-in board populated with lots of memory. Furthermore, the emulator allows you to still use whatever memory you do have on the system. If your primary purpose is to run a huge program like *Lotus*, then emulators are fine.

If, however, you want to be able to load your system up with TSR programs, you are out of luck. TSR programs must still be loaded into the basic 640 K conventional memory of your computer in order to be able to pop up with the touch of a hot key. Extended memory does not conform to LIM 4.0 standards, so it is not possible for this memory to do the same thing as expanded memory. Emulators merely allow non-expanded memory to act like expanded memory in a limited way. The instantaneous nature of switching programs simply does not work at the speed of LIM memory and—equally important—multitasking is not possible.

> *The most promising product to investigate is the All Chargecard. This is a hardware/ software solution and works especially well for people who have invested a lot of money in extended memory.*

What this means is that programs loaded outside the 640 K area are not instantly available. So what looks like it will really beat the 640 K barrier is really more a mirage than a watering hole. As long as you know what you are getting, and that is what you want, software emulators are fine. But if you really want capabilities beyond just running large memory hog programs, then you must look elsewhere.

The most promising product to investigate is the All Chargecard ($395). While it looks expensive, it may turn out to be a bargain. This is a hardware/software solution and works especially well for people who have invested a lot of money in extended memory.

If you decide to just bite the bullet and go out and buy an LIM 4.0 expanded memory card, you will not only have to buy the expensive card and enough memory to get your job done, but you will also have to abandon existing memory beyond the first 256 K in your system. LIM 4.0 works by switching memory in and out of the 640 K area, and therefore becomes increasingly less efficient the more there is in the basic system. So you pay for new memory and disable much of the old memory that you already own.

The All Chargecard utilizes every bit of memory that you already have! If you are adventuresome, you can purchase the card and do the installation yourself, but this is not a project for the timid. This is no ordinary card. In fact, it is not really a card in the conventional sense of fitting into an expansion slot.

The All Chargecard is a hardware device that fits between the CPU and the motherboard. You unplug the 80286 chip from the motherboard, plug in the All Chargecard, and then plug in the 80286 to the card itself. When you fire up the computer it operates as if you had done nothing. If you stop there, it is completely transparent to your system in every way.

Fortunately, however, this is not the end of the installation, but merely the end of the difficult part. From there on, it is a software job. By plac-

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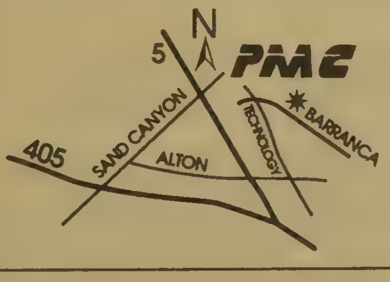

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ing a new driver statement in your config.sys file, you have really converted your memory to true LIM 4.0 expanded memory.

Now the fun really begins. TSR programs can be loaded into this extra memory area and will function as if they were in the conventional 640 K area. And you are now able to run *DESQview* and *Windows* as well as other programs that require real expanded memory. Suddenly you are into a new dimension of computing. You can, depending upon how much memory you have, switch instantly among application programs and, with the same ease, call up resident favorites with the touch of a couple of keys. This magic, however, is possible only if you install a new interface.

Interfaces

Once you have gone to the trouble to break through the 640 K barrier and added additional memory to your system, you may as well move on to the last step of upgrading and install a new interface. This will give a new look and feel to your computer.

It is possible to upgrade memory and continue to work just as you have in the past. It will certainly be an improvement, because you will be able to load both larger and memory resident programs into the computer. But to really move into the modern age, why not use a windowing program that will allow you to take full advantage of the technology at hand?

I have worked with *DESQview* ($129.95) and find it to be a real joy. Suddenly all of the things that I thought a computer should do are possible. *DESQview* allows you to open up to nine windows simultaneously and with the touch of two keys move instantly among them. The "instantly" part of this depends upon the amount of memory you have installed. A minimum of 2 Mb is recommended for *DESQview*.

But not only can you move between windows, you can also enlarge the windows to fill the entire screen, so you are not working in an environment smaller than your full screen. When you move a new window to the foreground, the other applications can continue to work in the background. Furthermore, you can transfer information between the windows by pressing a few keys.

Although I upgraded to *DESQview*, there are a number of other windowing environments on the market. Each has its own advantages and disadvantages. *DESQview*, however, is commanding an ever-increasing share of the windowing market and is published by a progressive company that continues to improve its product and service to its customers.

Once you've broken through the 640 K barrier and added memory to your system, you may as well move on to the last step of upgrading and install a new interface. This will give a new look and feel to your computer.

They make other products besides the *DESQview* package. Especially useful is the *DESQview Companions* ($99.95), which includes four modules.

The Datebook is a fabulous program for keeping track of your schedule and organizing your calendar. I have seen other programs that do the same thing, but I never really felt they were worth the effort. But this one seems different because I can leave it in one of the windows and it is instantly available.

The Notepad is a *WordStar*-like word processor that has the advantage for me of making it easy to edit *DESQview* macros. Unlike your regular word processor, it will convert *DESQview* macro scripts into text so you can edit them. This is often convenient when playing around with macros to get them just right.

Link is a communications package that enhances the basic program, but I could find no reason to switch from my standard communications package. And finally, the Calculator works just like a ten-key calculator, performing all of the basic functions and offering a screen version of the calculator tape. The only thing I don't like about this module is that it does not allow you to set it up to accept

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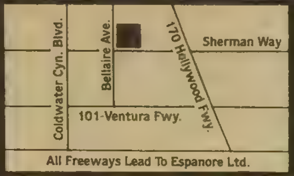

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Keyboards And Modems

Now that you have a computer that is really upgraded to a new 80286-based computer that you would buy today, you might think about a few more frills that can enhance the pleasure you get when you work at your computer.

The two most important things to the user, after the inner workings of the mysterious box, are the keyboard and monitor. You have already upgraded the monitor, so now you might think about a new keyboard.

My preference is for an enhanced keyboard that has a numeric keypad separate from cursor control keys. I have tried lots of keyboards and really, none was just what I wanted until now. I recently began using the Northgate OmniKey Plus ($119). Never before did I think it was possible to fall in love with a keyboard, but it has happened. I'm head over heels in love with this one.

After giving the newer IBM layout with the function keys strung out along the top of the keyboard a fair try, I finally had to admit to myself that I preferred the old style with the function keys to the left of the typing field. Well, Northgate has gone one better. They have the function keys to the left, with F11 and F12 raised above the other ten so templates will fit around the traditional ten function keys.

In addition, there is space for function keys to go across the top as well, so you can have your choice. This top row is still in the planning stages and will be available as an add-on. You will be able to set the keyboard up so those top function keys will work as plain Jane function keys or as either shift, alt, or control plus the function key. So, if you use a program that demands that you hit shift plus the function key, it can be done with one keystroke on the OmniPlus.

The touch is the best I have found to date. And finally, they have avoided the tradeoff that you generally have to make when getting an enhanced keyboard. Most have the layout so that the cursor control keys are really not as convenient as on the old numeric keypad. Northgate simply includes two numeric keypad layouts—one for the cursor keys and the other for numbers.

I really could go on and on about this keyboard, but let me simply say that I can think of no way a few bucks could make such a difference in the way your computer works and feels. If you don't like the keyboard, they'll give you your money back.

> *I recently began using the Northgate OmniKey Plus. Never before did I think it was possible to fall in love with a keyboard, but it has happened. I'm head over heels in love with this one.*

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Over the years the 2400 baud modems have undergone a good deal of improvement. In inexpensive models, you can get a decent standalone model for about $125. Internal modems will cost less because they don't require a housing or power supply.

Today the best models have some kind of compression feature that will ensure a faster throughput as well as more accuracy. Our old friends ATI make the model that seems to be the best buy for the money because their modem has MNP 5 error correction and compression. They say this will give the equivalent of a modem running at 4800 baud when the computer at the other end of the line also uses a modem that has the MNP 5 capability. Many of the bulletin boards already support this level of error correction.

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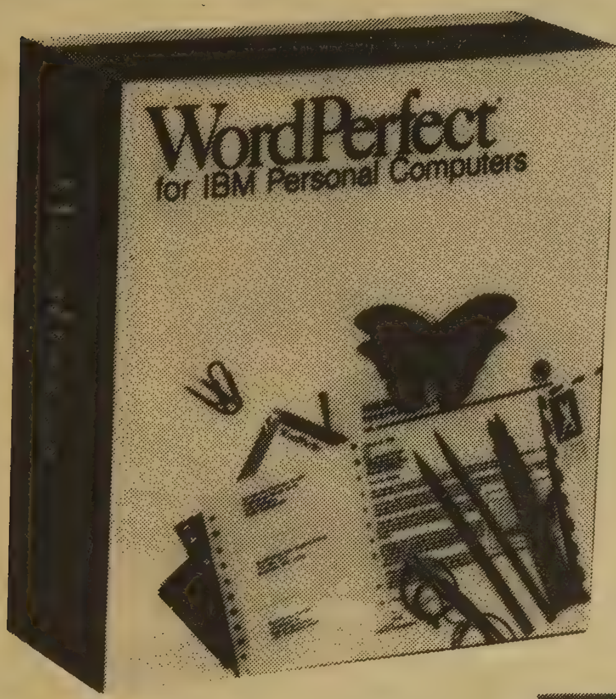

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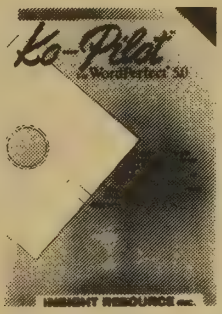

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I find a lot to like about the external model that I use besides the compression. The front panel lets you do lots of things, like set the modem to and from auto-answer. This is especially useful in turning off the auto-answer setting after you are done with the occasional call in which you want to have the modem answer.

Another thing I really like is a decent volume control. I use the modem for dialing most of my phone calls and I need to be able to hear when the phone is answered so I can pick up my telephone handset.

The documentation that comes with the ATI is clear and thorough.

If you do a lot of modem work between two locations, you might consider buying a pair of high speed modems. Telebit makes the model 1000 (street price about $600), that squirts out the data at 9600 baud. They have their own proprietary speed-up protocol that will work only if you have two of their modems. But at that point the transmission is faster than a fax.

Operating Systems

Once you have your AT brought up to completely modern standards for this kind of system, you may want to consider upgrading your version of DOS.

Microsoft recently introduced a new upgrade of the operating system. If you have an AT-class computer, you have at least DOS 3.0, as this was the first version of the operating system that supported high density 5 1/4" drives. There is really no reason to upgrade your operating system beyond DOS 3.3, unless you want the newest version or have a specific need.

Although there are a number of refinements in version 4.01 (4.0 is to be avoided, it is generally thought), the main differences that you will notice are the inclusion of the DOS Shell. This is a program that allows you to navigate around DOS without ever seeing the C>. It also gives you the option of using a mouse. Many who are familiar with navigating DOS think the shell is a waste of time, but if the C> has always been the symbol of an unpleasant mystery to you, then perhaps there is some value to the shell.

The second major refinement is that DOS 4.x will support hard disk drives larger than 32 Mb. This means that you do not have to partition a large hard disk into several disks. Although many like the smaller disk partitions because it forces them to organize their disks in a more orderly fashion, I suspect that in time the larger single directory will win out.

In any case, there is no compelling reason why you must upgrade your operating system beyond version 3.3.

The ideas covered in this article are designed not as a step-by-step guide to upgrading your computer, but rather as a sketch of what is possible and practical.

You can easily upgrade selectively. The most dramatic change will come from expanding your memory and installing a new interface. Certainly this is the wave of the future, and the future is here now. ■

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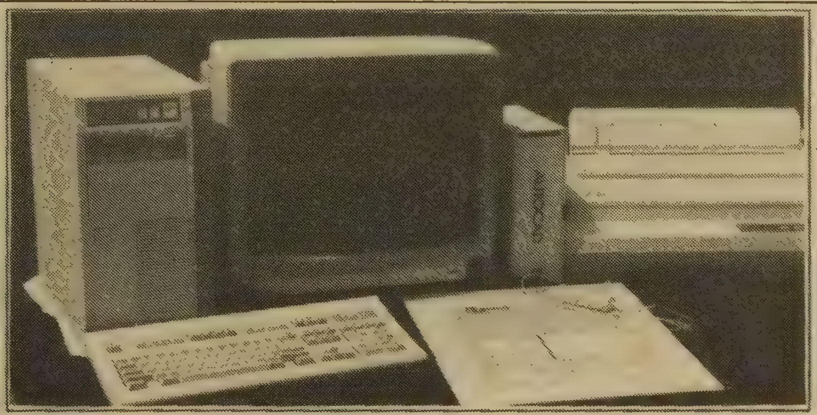

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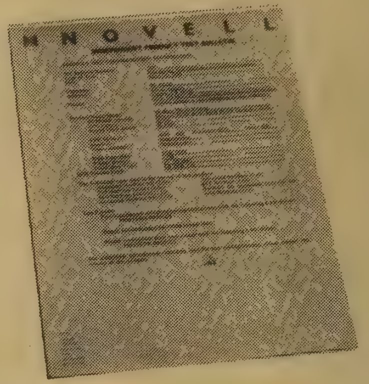

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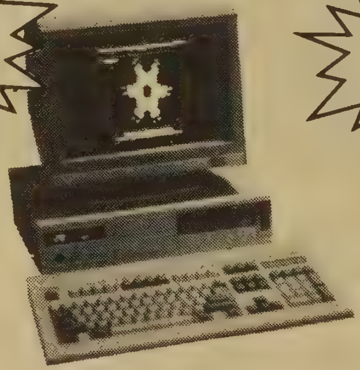

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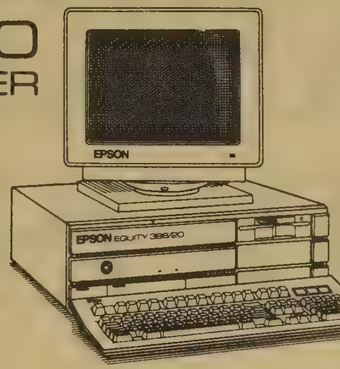

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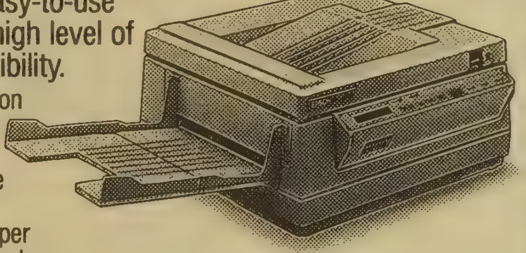

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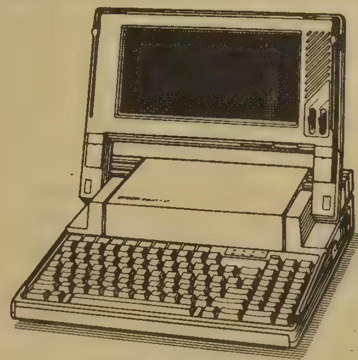

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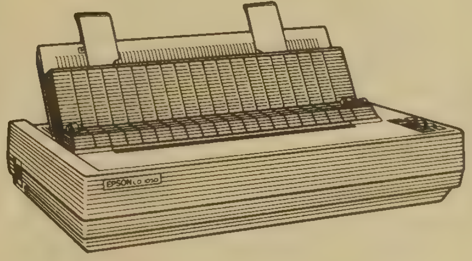

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MULTITASKING With DOS

By Lenny Bailes

I called my computer guru the other day for advice on the current state of multitasking, and here are some of the points he made: The multitasking concept is still mostly hype, he says. "No machine yet made does multitasking successfully. Even when the system works, which rarely happens, foreground and background functions are slowed to an exasperating crawl, and interrupt each other annoyingly. Even IBM has stopped talking about multitasking with OS/2. If you absolutely must do multitasking, the most efficient way to do it is to buy and use a second computer."

Whatever the industry gurus have to say about multitasking, I continue to find it useful and convenient to do the following every day:

a) Dial up bulletin board systems and upload and download files in the background while continuing to type in a word processor.

b) Run two copies of the same word processor concurrently, one sending output to a printer, the other printing the same document to an ASCII disk file for a client, while at the same time DOS formats new disks in the background.

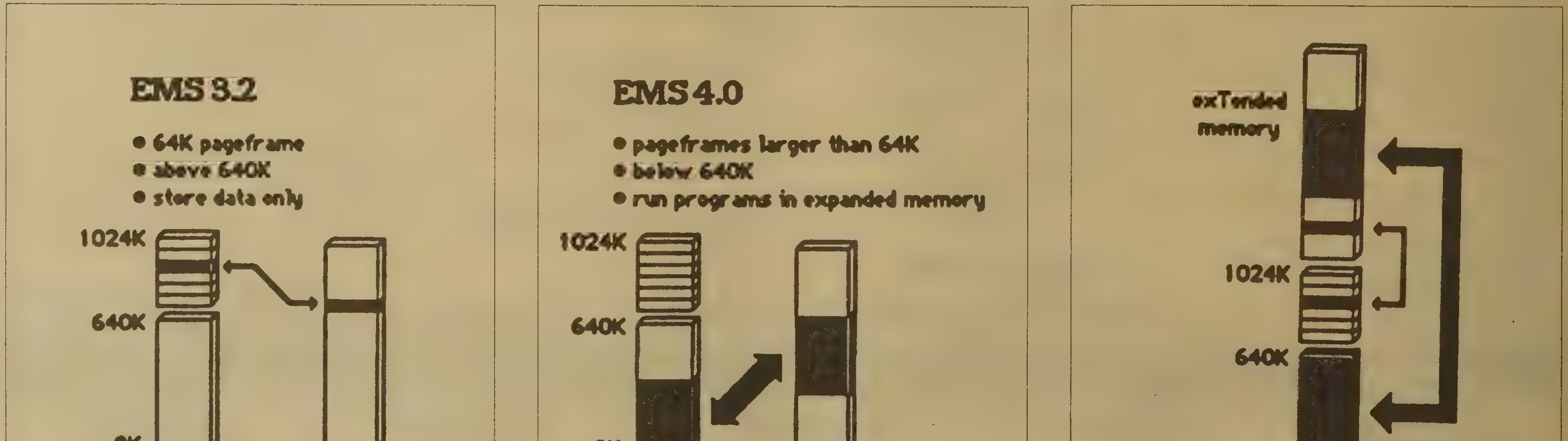
c) Run desktop publishing and word processing programs in concurrent windows, with the ability to bring up a drawing program to modify a graphic, or open a window to do DOS file manipulations (while, in the background, communications software continues to dial, upload or download).

I accomplish these tasks easily with Quarterdeck's *DESQview* 2.2 on a 12MHz 80286 machine with 640 K of conventional memory and an additional megabyte and a half of expanded memory. It would be just as easy for me to run extended database or spreadsheet compilations instead of word processing tasks.

For anyone who wants to do two things or more concurrently on an MS-DOS computer, *DESQview*, selling for under $100, is almost as essential a piece of software as DOS itself. Properly installed, *DESQview* does its job transparently on 8088, 80286 and 80386 computers alike. It allows you to run and switch between as many off-the-shelf PC applications as you can provide memory for.

Many people are already aware of *DESQview*'s capabilities through word of mouth and advertisements, but become frightened off by the technical concepts needed to exploit it efficiently. Quarterdeck Office Systems is releasing several enhancements in October to make it easier to understand the fine art of memory management.

This is welcome news, but the most difficult thing for most people to get straight with running *DESQview* is what kind of hardware they're going to need. What kind of memory card or motherboard do you need, what is "expanded memory," and how does



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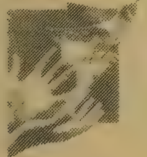

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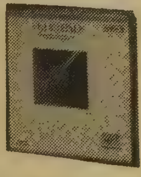

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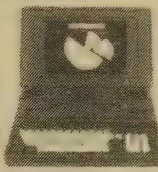

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it differ from "extended memory" or "conventional memory"? Once you buy *DESQview*, how do you get it to use the memory, and, if you want to upgrade an existing system, what should you buy?

Memory: Extended Vs. Expanded

Gary Saxer, Quarterdeck's leading evangelist, often tells user groups to think of exTended memory for AT computers as Totally useless, whereas exPanded memory is for Programs to run.

Extended memory arrived first in the PC world with the 80286 chip's capability to address 16 Mb instead of one. MS-DOS, the operating system, could still address only 1 Mb at most, so when the IBM ATs came out, all the extended memory could do was act as storage space. Up to 16 Mb could be used for virtual disks (RAM drives), print spoolers and disk caches (extra pockets in RAM for DOS to store information without having to reread it from a floppy or hard drive).

The XTs (8088s) were left out in the cold, not capable of even these small feats.

Lotus, Intel, and Microsoft formed an alliance in 1986 in order to trick DOS into being able to use more memory on any kind of PC. The LIM Expanded Memory Standard was the result. Expanded (program) memory became something that worked like the RAM on your video card. While it occupied no real space within the allowable megabyte of DOS, EMS was allowed to communicate with the system by swapping information into a fixed address space in the memory area between 640 K and 1 Mb. This area, sometimes referred to as high memory, is the place where IBM decided to place the address space for video memory (704 K-736 K) and the ROM BIOS (896 K-1 Mb).

Other PC peripherals like disk controllers and scanner cards would sometimes claim a chunk of "high memory," but almost everyone had some contiguous segment between 640 K and 1 Mb which could be used for an expanded memory window (called a page frame). The EMS page frame acted like a dumbwaiter or ferry between DOS and the RAM chips mounted "off to the side" on your EMS card. Programs like Lotus *1-2-3* could now shunt chunks of data through the 64 K page frame and store them on the EMS card. The card could store up to 8 Mb of information, but *Lotus* or *dBASE* would call for the information in 64 K chunks through DOS, conforming to DOS's limited 1 Mb address space.

For anyone who wants to do two things or more concurrently on an MS-DOS computer, DESQview, selling for under $100, is almost as essential a piece of software as DOS itself.

EMS 3.2 (as the above-described process was called) allowed programs specifically coded for EMS (including print spoolers and RAM disks) to hold large spreadsheets, databases, or pixel arrays in memory, but no program could use more than 64 K of expanded memory at one time.

AST Research did the LIM EMS 3.2 standard one better. They built the capacity into their memory boards to "page" more than one 64 K chunk at a time through the EMS window. They called their products EEMS cards for Enhanced Expanded Memory. What the Double-E accomplished was to allow *DESQview* to treat entire programs (larger than 64 K) as part of its own data. This let *DESQview* run entire programs in EEMS concurrently with programs running in conventional DOS (0 K to 640 K).

This was the big breakthrough. Users were now able to run communications programs and recalculate spreadsheets in the background, while they continued to type or perform DOS file manipulations in the foreground.

A variety of memory cards began to hit the market at this point. Some were extended memory only—totally useless, according to Saxer, except on a 286 machine for print spoolers. Some cards were LIM 3.2 (useful with programs like Lotus *1-2-3*, *dBASE*, and *Framework* to hold large chunks of data in RAM). The most desirable cards were EEMS cards produced by AST Research (used with *DESQview* to run entire programs in expanded memory).

If you've got all that down, you're almost ready to start looking for contemporary memory enhancement hardware. The Lotus-Intel-Microsoft people, realizing that AST had outdone them, decided to collaborate with AST in 1987 to develop the current EMS 4.0 standard. LIM 4.0, when implemented on a new memory board, contains the hardware improvements of AST together with an improved software standard that can address up to 32 Mb of expanded memory instead of only eight.

Choosing EMS Hardware

If you own a 386, you may skip most of the following information about expanded memory boards. Your machine can emulate LIM 4.0 EMS with the extended memory installed on the motherboard. Your main concern for expansion will be determining the type and size memory chips your board uses and whether to stick with Quarterdeck's 386-control software or to sample more exotic products.

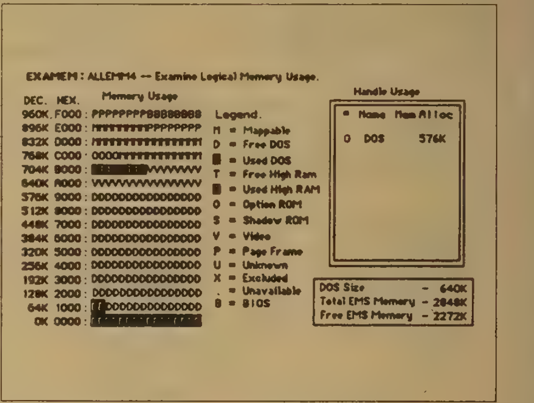
Quarterdeck's QEMM.SYS lets you automatically use all of your computer's memory with *DESQview*. Or you can load RAM-resident programs and device drivers into expanded memory, saving conventional memory for other RAM-hungry applications. QEMM v.5.0, the new release, is reported to be able to reclaim the 384 K of the first megabyte, which some systems presently use only as dedicated shadow-RAM.

If you use a PS/2 Model 50 or 60, Quarterdeck's new QEMM 50/60 will allow you to load TSR utilities into expanded memory. Even more power is available for PS/2 systems with the All Chargecard from All Computer

The All Chargecard

No LIM 4.0 card I've used can match this product for a 286 machine running *DESQview*. The Chargecard is a credit-card-sized board which plugs into the 80286 socket on your motherboard. With the supplied software driver, all conventional and extended memory in a system automatically converts to pageable LIM 4.0. You can use the memory mounted on your motherboard and/or add in an inexpensive extended memory card. (Extended memory cards are usually available for $50-$100. Check the ads in this issue of *MicroTimes*.)

The Chargecard is guaranteed for systems running up to 16 MHz, and is known to work on some 20 MHz machines. The 386 "paging" capability allows for loading of TSRs and device drivers into expanded memory, as with QEMM on the 386. For systems running Hercules and CGA cards, windows of up to 640 K can be opened both in conventional and expanded memory. The All Chargecard has recently been OEM'd by IBM as an officially recommended add-on for their PS/2 systems.



```
EXAMEM : ALLEMM4 -- Examine Logical Memory Usage.
                                                         Handle Usage
DEC.  HEX.    Memory Usage                             # Name  Mem Alloc
960K. F000 : PPPPPPPPBBBBBBBB   Legend.
896K  E000 : MMMMMMMMPPPPPPPP   M = Mappable           0  DOS      576K
832K  D000 : MMMMMMMMMMMMMMMM   D = Free DOS
768K  C000 : OOOOMMMMMMMMMMMM   █ = Used DOS
704K  B000 : ████████VVVVVVVV   T = Free High Ram
640K  A000 : VVVVVVVVVVVVVVVV   █ = Used High RAM
576K  9000 : DDDDDDDDDDDDDDDD   O = Option ROM
512K  8000 : DDDDDDDDDDDDDDDD   S = Shadow ROM
448K  7000 : DDDDDDDDDDDDDDDD   V = Video
384K  6000 : DDDDDDDDDDDDDDDD   P = Page Frame
320K  5000 : DDDDDDDDDDDDDDDD   U = Unknown
256K  4000 : DDDDDDDDDDDDDDDD   X = Excluded
192K  3000 : DDDDDDDDDDDDDDDD   . = Unavailable      DOS Size         -  640K
128K  2000 : DDDDDDDDDDDDDDDD   B = BIOS             Total EMS Memory - 2848K
 64K  1000 : █DDDDDDDDDDDDDDD                        Free EMS Memory  - 2272K
  0K  0000 : ████████████████
```

The utilities provided with the All Chargecard can display how DOS allocates your memory.

All also markets a special 8088 Chargecard for XTs, which works in conjunction with a special 8088 memory card, sold separately. An 80386 version of the Chargecard is in the works. The software bundled with the Chargecard includes a graphic display utility which teaches you how to allocate high memory for maximum efficiency.

The only caveat I would make about the Chargecard is that it's a good idea to have the dealer install the card when you purchase it. Although the manual gives extensive installation instructions, there are three different kinds of 80286 sockets found among common clones, and only one (the PGA socket) is really easy to pry the CPU chip out of. If you have one of the other two kinds of sockets on your motherboard, even if you scrupulously follow the instructions, you are likely to bend or break some fragile pins and be sorry later. In the Bay Area, the Software Engineering Store offers the Chargecard at a discount, and will install it for you for a small additional fee.

—Lenny Bailes

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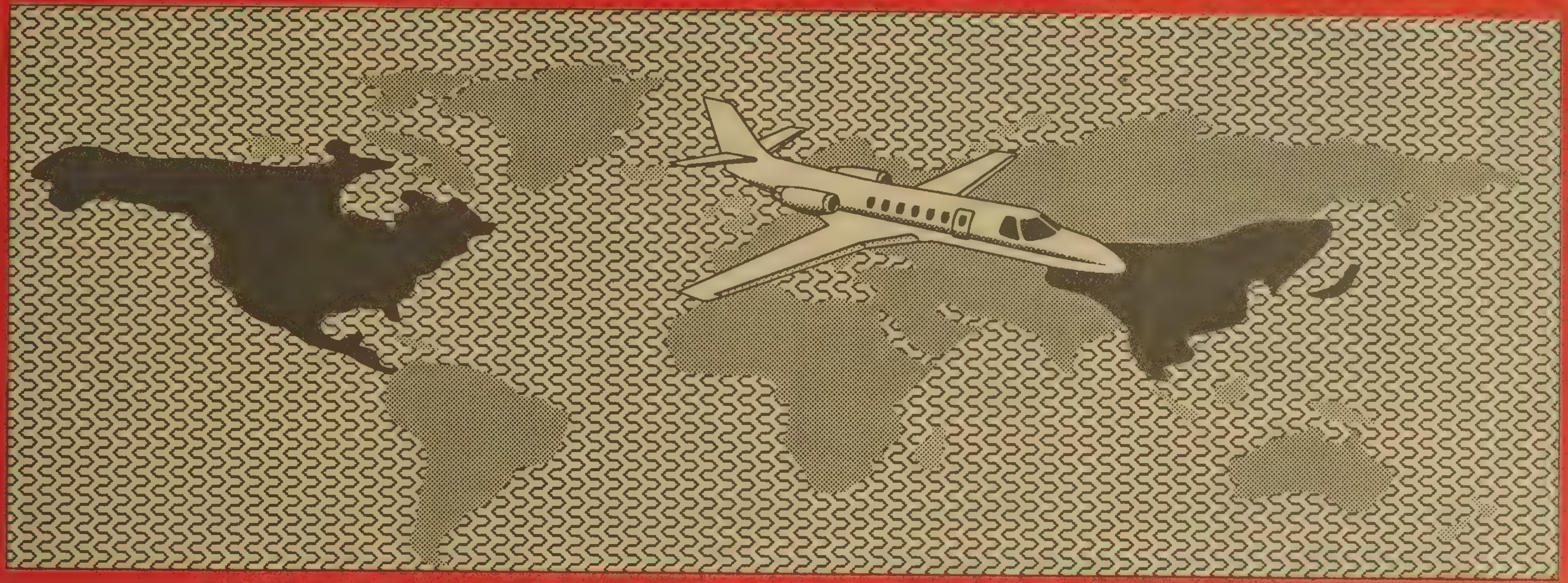

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Systems of Toronto, Canada. The Chargecard is a miraculous bit of hardware which gives 286/extended memory the ability to emulate 386/paged memory. QEMM 50/60 works only with IBM's special XMS memory cards, whereas the Chargecard will convert any extended memory into EMS. The Chargecard also does this trick with non-PS/2 80286-clones. The Chargecard is the most efficient way to gain LIM 4.0 capabilities on any system where the motherboard holds more than 1 Mb of RAM.

Generic Clones

If you own an older AT or 286-clone, it probably holds a maximum of 1 Mb on the motherboard. This is where add-on memory cards come into the picture. Check your manual to find out what the maximum and minimum memory configurations of your system are, and what size and type memory chips the motherboard uses. (Older motherboards use 16-pin 256 K DRAM chips. More recent motherboards may use 1 Mb DRAMs or special 256 K or 1 Mb SIMMS modules. These chips aren't interchangeable on most EMS cards.) Knowing the memory capacity of your motherboard will help you determine whether to buy an All Chargecard or increase your memory with an add-on board.

Most motherboards are not wired with the LIM 4.0 "paging" capability. The All Chargecard adds 4.0 paging to any 286 motherboard, or you can buy an add-on memory card which fits into one of the slots on the bus. The "true LIM 4.0" cards are made to substitute memory for chips normally mounted on the motherboard. EEMS and LIM 4.0 cards can "backfill" a portion of memory from 256 K to 640 K. The *DESQview* manual devotes a considerable number of pages to the arcane art of backfilling. Summarized briefly, it goes like this:

a) To run programs in EEMS or LIM 4.0 EMS, you must have an equal amount of "pageable" memory installed below 640 K.

b) Most AT clones will only let you disable down to 512 K on the motherboard. If you remove all but 512 K, an EMS card can backfill the other 128 K. This gives you 640 K of conventional memory plus the remainder on the EMS card configured as expanded memory. (Some cards will let you configure the remainder as either expanded or extended. This can be useful at times.) With a 512 K-minimum motherboard, the largest programs that run concurrently in EMS are 128 K. Under *DESQview* you can run programs totaling about 500-550K of conventional memory, and as many 128 K windows as you have RAM for on the EMS card. For instance, if you have 512 K on the motherboard and 1 Mb on the EMS card, you will boot up with 896 K of expanded memory. You'll be able to run one 500-550 K program plus six to seven 128 K programs *all at the same time*.

In some cases, if you use a Hercules or CGA graphics card, the 128 K window can be expanded to 192 K by using video address space. That's the biggest window you can get with an EMS card and a 512 K minimum motherboard. (If you've been following carefully, you may have figured out that you want an All Chargecard to multitask bigger programs with this kind of system.)

c) You may be lucky enough to own an AT-clone which disables down to 256 K on the motherboard. In that case, if you backfill from a LIM 4.0 card, the largest program you can run in EMS will be 384 K (640 - 256 = 384). Add another 60-90 K to the window size if you use CGA or Hercules card and can access video memory.

d) You may own an AST Research 286 machine. These have LIM 4.0 paging wired into the motherboard. No backfilling is necessary with these motherboards, and the programs you run in EMS can be

LOTUS, INTEL, AND MICROSOFT FORMED AN ALLIANCE IN 1986 IN ORDER TO TRICK DOS INTO BEING ABLE TO USE MORE MEMORY ON ANY KIND OF PC. THE LIM EXPANDED MEMORY STANDARD WAS THE RESULT.

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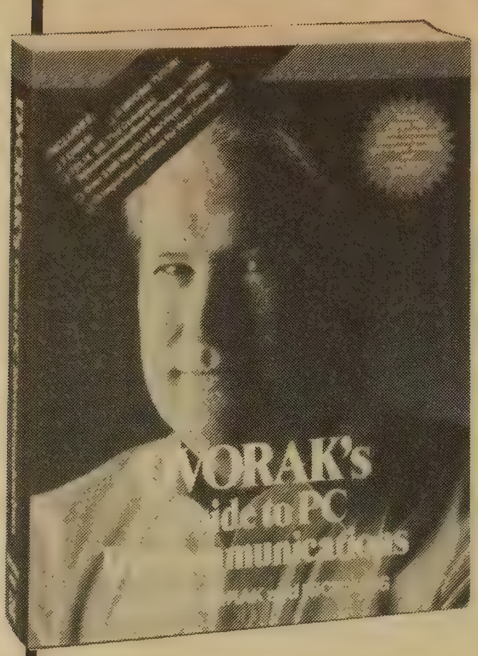

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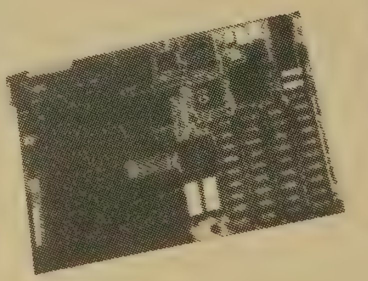

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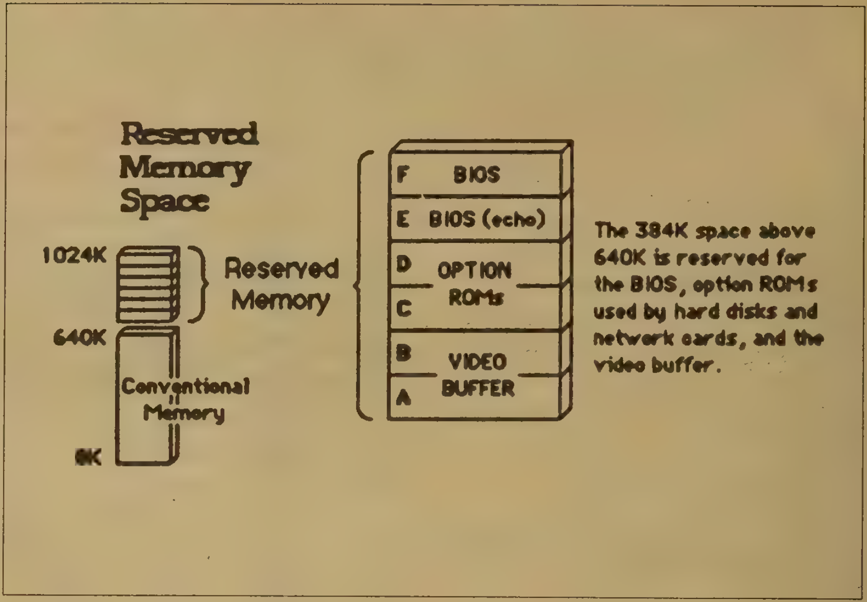
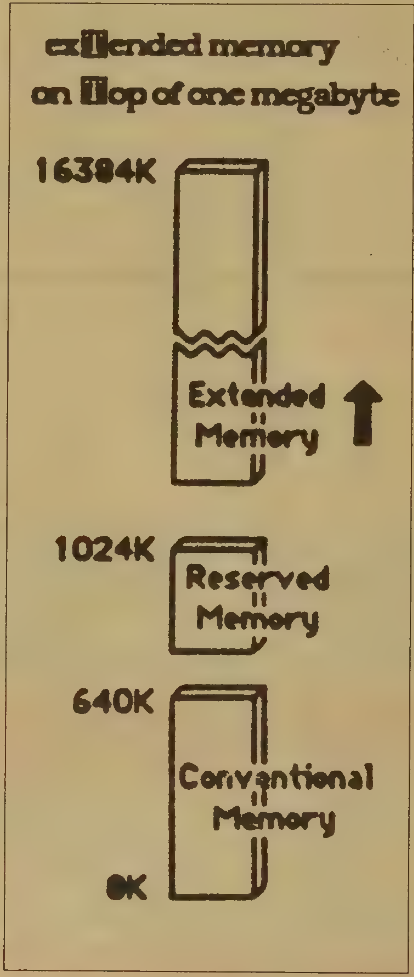

Reserved Memory Space
1024K
640K
0K
Reserved Memory
Conventional Memory
F BIOS
E BIOS (echo)
D OPTION ROMs
C
B VIDEO BUFFER
A
The 384K space above 640K is reserved for the BIOS, option ROMs used by hard disks and network cards, and the video buffer.


extended memory on top of one megabyte
16384K
Extended Memory
1024K
Reserved Memory
640K
Conventional Memory
0K

On the 286, memory may be *extended* up to 16 megabytes beyond the real mode address space.

the same size as those in conventional memory (usually a maximum of 500-550 K)

Reviewing what we've covered: running programs in EMS requires either AST EEMS memory, a hardware-compatible LIM 4.0 board, or a motherboard with hardware LIM 4.0 wired in. (Some newer motherboards using the Chips & Technologies Chipset claim to be LIM 4.0 compatible, but the compatibility is software only. NEAT motherboards won't run programs in EMS under *DESQview* without an add-on card.)

There are several older AST memory cards which will work on 286es with clock speeds of 6-10 MHz, and some which work on 8088 machines. If you own a faster machine, you will generally need a newer board and/or the All Chargecard. Unlike the early Intel boards, and their clones, AST EEMS memory can be upgraded to full LIM 4.0 compatibility with just the addition of a new software driver. AST has these drivers available on its BBS system, and will ship them by mail.

If you own an early Intel Above-Board, you can also upgrade with new software; the 4.0 software driver will perform faster than the LIM 3.2 driver, and it will address 32 Mb instead of 8, but it will not run programs in EMS under *DESQview*. This goes for the Everex RAM 3000, and DTK Rambank as well.

If you own an older LIM 3.2 board, *DESQview*'s access to the EMS is limited to utilizing it as swap space, the same as if the memory were configured as a RAMdisk. You can open multiple windows, as with Software Carousel, but once you exceed 640 K,

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previously loaded programs are suspended and stored; they don't run concurrently.

Typically, older boards from AST and Intel are offered by resellers for around $75 to $150 with 0 K on the board.

The most popular vendors of current, fully compatible LIM 4.0 cards are:

AST Research—Rampage+, holds up to 8 Mb and can be used in systems up to 16 MHz. Allows control of backfilling in 128K increments (uses SIMMS modules, not 256K DRAMS).

Intel—Above Board+, holds 2 Mb (DRAM chips) (piggyback card w/6 Mb capacity sold separately). Increments extended/expanded memory in 512 K segments (not as convenient as AST).

Micron Technology—Micron EMS Board, holds up to 2 Mb (DRAM chips) 2 Mb piggyback sold separately. Backfills in 128 K increments.

CEI of America—RAMFLEX, holds 2-8 Mb (1 Mb DRAMs only). This board got raves last year in *Infoworld* as the fastest performer of all.

For more information about these boards, Quarterdeck suggests that customers refer to two issues of *Infoworld* (12/12/88 and 2/20/89), where there are extensive reviews.

Longshine Technology—Longshine EEMS Card. This is a clone of the AST board, which I discovered at a swap meet. It retails for under $100 with 0 K on the board, and performs satisfactorily with *DESQview* as an EEMS board on systems running up to 12 MHz clock speed. The company has a beta LIM 4.0 driver which runs *Windows 286* satisfactorily but has problems with versions of *DESQview* above 2.01. The card holds up to 2 Mb in 256 K DRAMs and must be configured as either all extended or all expanded. It may work on 12-16 MHz systems (see if you can arrange a test before purchase).

Memory Speed Considerations

Most XTs and ATs in the 8-10 MHz range require memory chips with a speed of at least 120 nanoseconds. For the 12-20 MHz range, 100 nanosecond chips are required. Above 20 MHz you need 80 ns chips. Depending on your motherboard and card, you may be able to get away with mixing chips of different speeds, but don't count on this unless you physically confirm it first. If in doubt, make sure all the chips on the motherboard and EMS card conform to the minimum speed requirements.

Tweaking DESQview For Best Performance

In the next installment, we will review Quarterdeck's new enhancements for *DESQview* and pass on some further tips for maximizing its performance capabilities. ■

Resources

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($595 w/0 K)
AST Research, Inc.
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Irvine, CA 92714
(714)863-1333

Above Board+
($695 w/512 K)
Intel Corp.
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Micron EMS Board
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RamFlex EMS Board
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Longshine EEMS/LIM 4.0 Board
($87.50 plus shipping, w/0 K)
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San Jose, CA 95132
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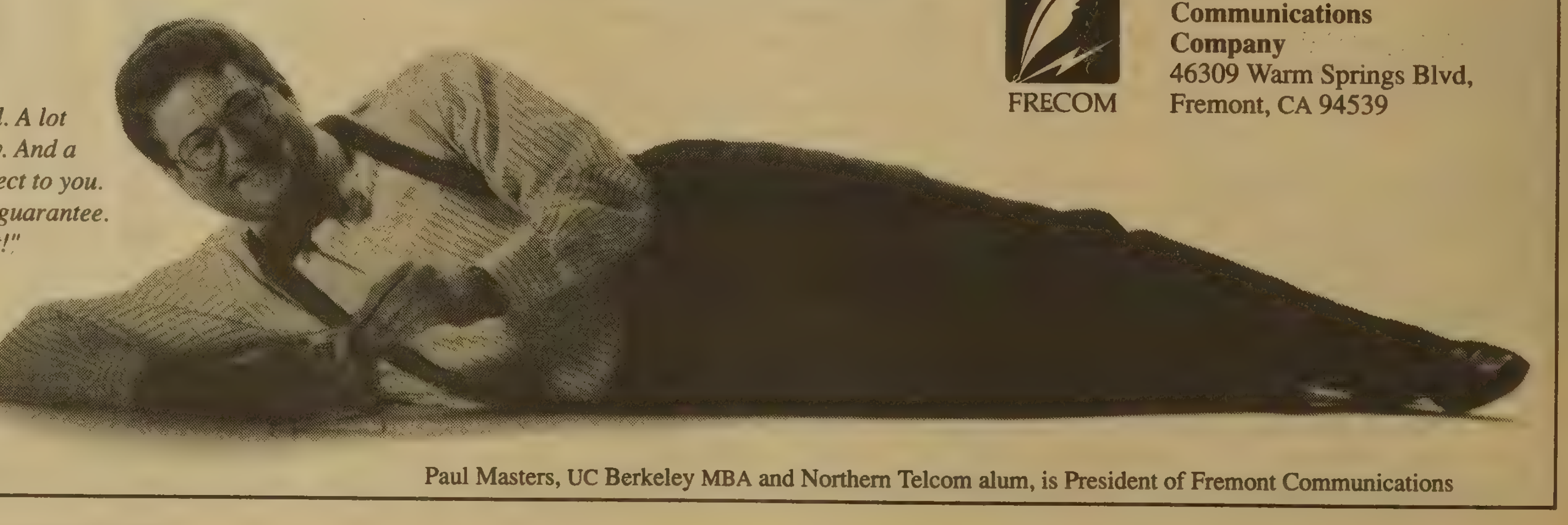

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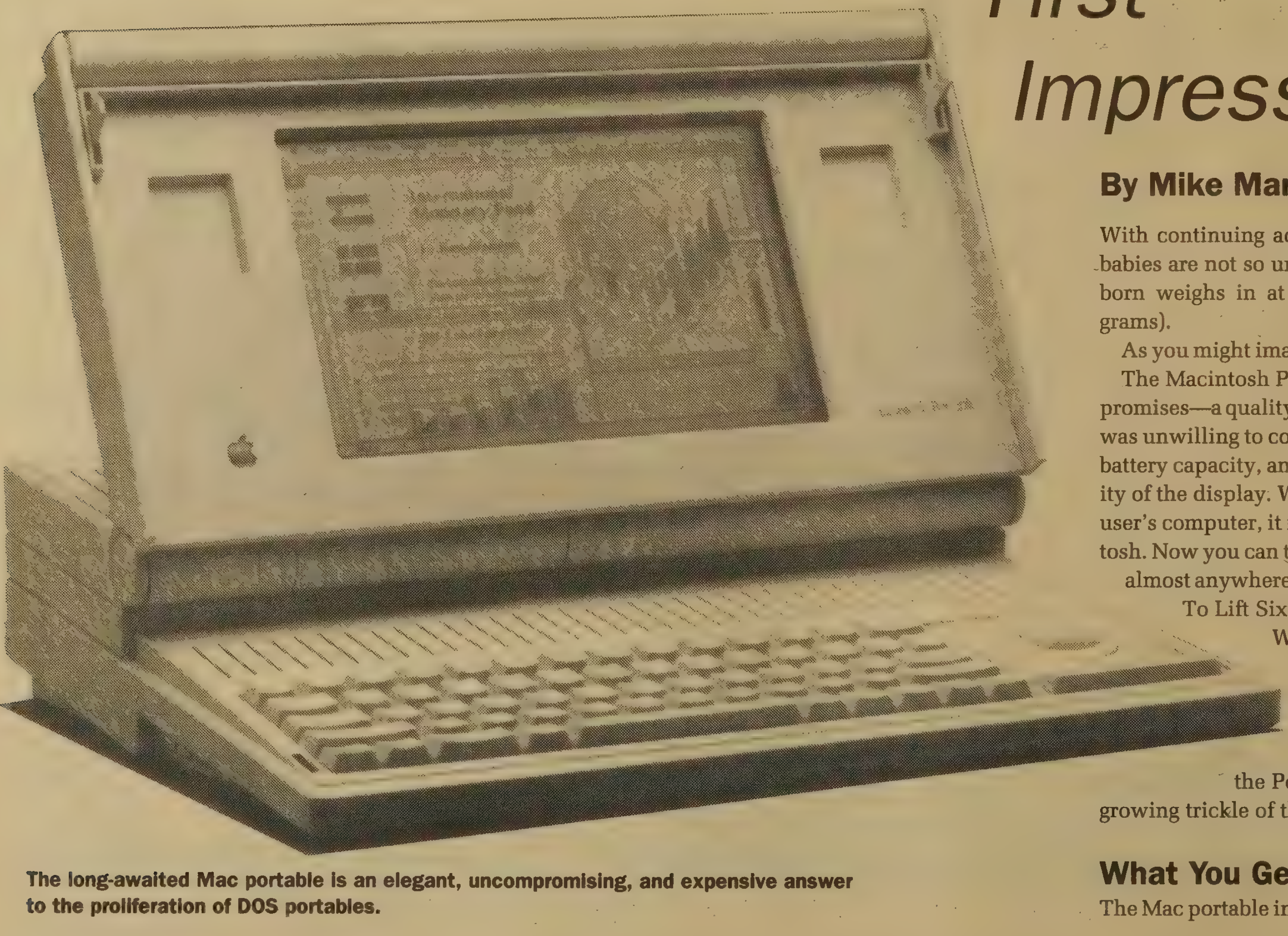
DFI LIM 4.0 memory board	$ 89	NEC Multisync 2A/3D	$530/690

MAC @ WORK

The Macintosh Portable:

First Impressions

By Mike Markowitz



The long-awaited Mac portable is an elegant, uncompromising, and expensive answer to the proliferation of DOS portables.

With continuing advances in prenatal care, large babies are not so unusual, but Apple's latest newborn weighs in at nearly 16 pounds (7.14 kilograms).

As you might imagine, it was a difficult delivery.

The Macintosh Portable is a product of no compromises—a quality unit at a premium price. Apple was unwilling to compromise on the keyboard, the battery capacity, and above all, the speed and clarity of the display. While it is by no means a power user's computer, it is unquestionably a real Macintosh. Now you can take The Power To Be Your Best almost anywhere, as long as you have The Power To Lift Sixteen Pounds.

Well, actually, you probably can't have it any time soon, but the government agencies and big corporations that signed up in advance for the Portable will be getting a slowly growing trickle of the marvelous machines.

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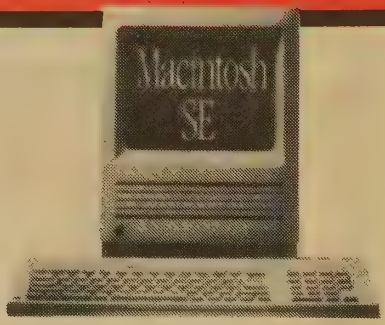

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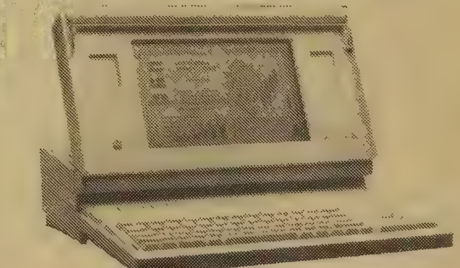

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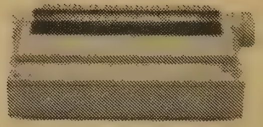

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Model 3300/3600/3700

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floppy "Superdrive," and (optionally) a low-power 40 Mb hard drive.

The standard configuration includes a trackball that can be installed on either side of the 63-key keyboard. It took about ten minutes, two small screwdrivers and some sweat to change the trackball from the right side to its proper southpaw location, following the procedure detailed in an excellent *HyperCard* stack that comes with the system.

There were no manuals with our review unit, and none were needed. A numeric keypad can be ordered to replace the trackball, in which case you can use a special low-power mouse that plugs into a standard ADB port.

Other ports include 8-pin serial printer and modem, SCSI, DB-19 external floppy disk, audio, and a new 15-pin connector for an external video adapter unit. The programmer's interrupt and reset switches, which are optional bits of plastic on other Macs, are buttons discreetly hidden on the left edge of the case. (The toggle switch right next to them disables the programmer switches, so they cannot be tripped accidentally.)

You will search in vain for a power switch—to turn the computer on, you simply tap any key on the keyboard. You turn it off in the usual Macintosh way—by selecting Shut Down from the Finder.

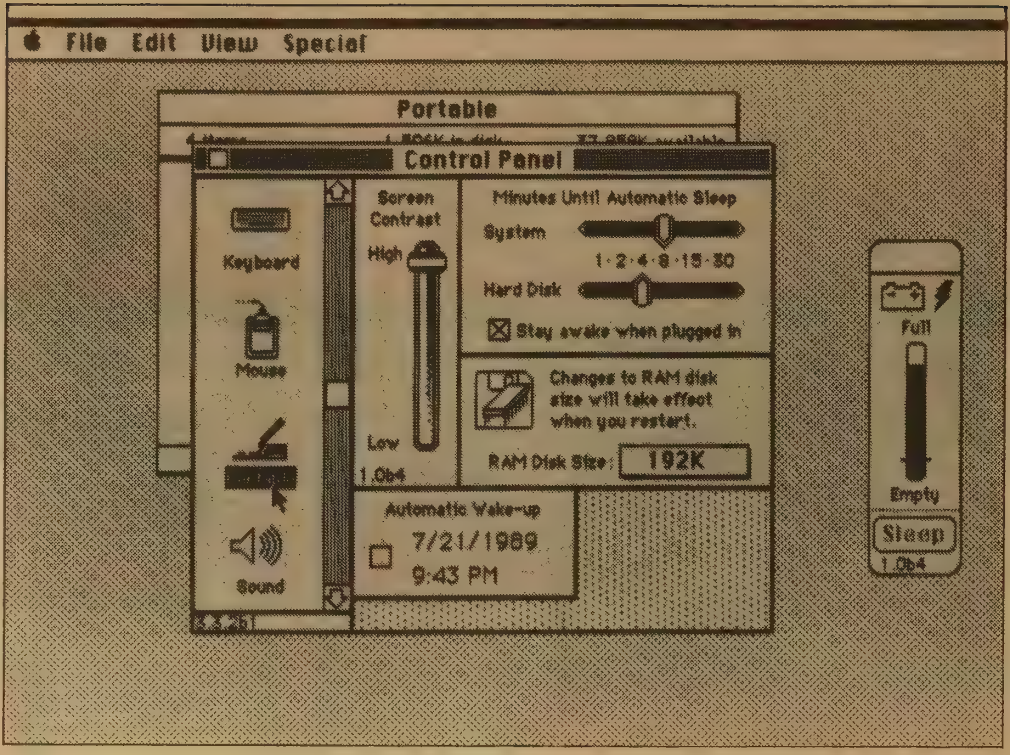
The AC power adapter is a 7-ounce box with a two-prong plug and a 6-foot cable. It delivers 1.5 amps of 7.5 volt DC current to a small circular socket on the back panel of the computer. The Mac Portable recharges its battery whenever the power adapter is plugged in.

The Portable comes with a foam-padded nylon fabric carrying case that includes pockets for the mouse, a spare battery, the power adapter, disks, and papers. The handle and shoulder strap are padded with some soft but durable rubbery material. The workmanship is excellent, but the matte black color is funereal and the distinctive designer look makes the case all too inviting as a target for theft. Zero Halliburton, the famous maker of camera cases for professional photographers, is offering an industrial-strength box for the Mac Portable. If it were my computer, and I had to schlepp it around the world, I'd want a funky old scuffed-up case with a big sticker saying "Medical Specimens" or something similarly repulsive to potential thieves.

According to a review in *Byte* (October) the portable in its carrying case fits easily under First Class and middle Coach seats on a Boeing 727. It would be a tight fit under the Coach window seats and it would not fit at all under the Coach aisle seats. Since most Mac Portable users will be traveling First Class, there's no cause for worry. Apple says that airport X-ray machines used in the United States cannot harm the data in the static RAM or on the hard disk, but older high-power units still found in some foreign airports might zap some bits, so you should request manual inspection.

Software

The Portable has its own special version of the System (6.0.4) and *HyperCard* (1.2.3). These are considered "maintenance updates" to accommodate the special features of the hardware. The hard disk units are shipped with the software already installed.



☒ Stay awake when plugged in

Changes to RAM disk size will take effect when you restart.

RAM Disk Size: 192K

Automatic Wake-up

☐ 7/21/1989 9:43 PM

A control panel window allows you to monitor the Portable's vital signs.

Most noticeable were the Battery DA and a CDEV that provides controls for screen contrast, RAM disk, automatic "wake up" and "sleep" timing. You can set the computer to automatically go to sleep after a variable number of minutes of inactivity.

The hard disk has its own sleep controls. When the system goes to sleep, it retains the contents of memory, but turns off the screen and all other power-consuming circuitry. When the hard disk goes to sleep, it wakes up whenever you save or open a file, but it takes about five seconds to come up to speed. This makes a high-performance hard disk sometimes seem very sluggish.

The Die Hard

According to Apple's Jean-Louis Gassee, "battery paranoia" was a major factor in the design of the Mac Portable. The battery is a sealed lead-acid gel cell that can power the computer for 6 to 12 hours. It can be recharged in about three hours.

Lead-acid batteries do not have the same energy density as the Nickel-Cadmium cells used in most other portables; that means they weigh a lot more for equivalent power output. On the other hand, they are cheaper to make and much easier to live with. Ni-Cads have two particularly nasty features. First, they give a nice, steady voltage right up until they poop out, suddenly and without warning. It is very difficult to accurately gauge the remaining charge in a Ni-Cad battery. Second, they must be "deeply discharged" before recharging; otherwise they gradually deteriorate, losing their capacity to hold a charge.

Lead-acid batteries, on the other hand, have a smooth, predictable voltage drop-off curve. The Mac Portable has a simple Desk Accessory battery gauge, and a four-stage warning system that displays a series of increasingly urgent dialog boxes. When you run really low, the Portable automatically puts itself to sleep, preserving the contents of memory. Lead-acid batteries do not need to be deep-discharged, you can "top them off" at any time, without harming their longevity or capacity.

A spare battery is only $49 list, and Apple has announced a standalone recharger, so that users can always have a fully charged spare on hand. The top of the case measures about 214 square inches, room for plenty of solar photovoltaic cells, but this would drive up the price another few grand...

The Mac Portable has a simple Desk Accessory battery gauge, and a four-stage warning system that displays a series of increasingly urgent dialog boxes. When you run really low, the Portable automatically puts itself to sleep, preserving the contents of memory.

Display

The screen is a 640 x 400 "Active Matrix Liquid Crystal Display." Every one of the 256,000 pixels on the screen is controlled by its own tiny transistor, making the entire 8 1/2" x 5 1/2" unit a kind of giant microchip. It shows solid black pixels against a silvery background. The screen can display the full width of a standard page. The 72-dot per inch resolution is the same as other Macs.

The screen angle is adjustable over a wide range, and the display is most legible when you have plenty of light coming from over your shoulder. I found it helpful to work in a bold font for maximum readability—you can always change the font back to plain before saving or printing a document.

The handle of the computer doubles as a latching bar for the screen when it is folded down over the keyboard.

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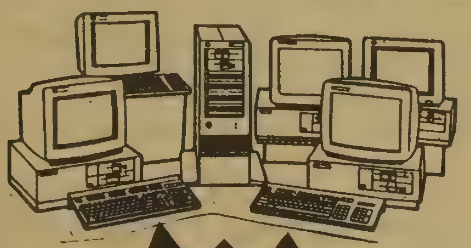

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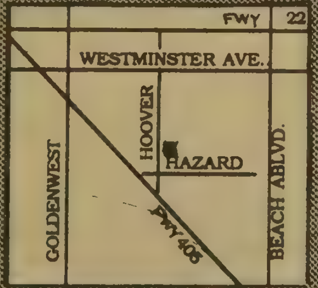

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Under The Hood

The rear cover of the Portable is very easy to remove—press inward on two latch buttons and lift it off. This gives access to the battery compartment and four slots: all different and none identical to anything on any other Macintosh!

The battery compartment holds the lead-acid gel cell, and a 9-volt alkaline battery that keeps alive the static RAM when the main battery is removed or exhausted. About half the size and weight of a brick, the main battery has gold-plated contacts.

There is a slot for an internal modem card (a plastic knock-out panel must be removed from the back panel to uncover an opening for phone cable connectors). There is a 96-pin processor-direct slot that could be used for high-speed network, accelerator, RAM expansion or other cards, a RAM expansion slot for Apple's 1 Mb memory card, and a ROM expansion slot. This could be used for future ROM upgrades, for third-party ROM disk cards, or conceivably for versions of the System software that require massive amounts of ROM, such as the Chinese and Japanese languages.

Up to 9 Mb of static RAM can be installed in the portable using third-party cards. The exotic 100 ns static RAM used by the Mac Portable costs more than twice as much per megabyte as the dynamic RAM we know and love. Apple did not provide a NuBus slot, such as those used on the Mac II—not only for lack of space, but because a single NuBus card draws more power than the entire Mac Portable.

The Bottom Line

The Mac Portable is a "checklist" item—something Apple had to have in its product lineup in order to compete for certain big government contracts. One industry observer I spoke with compared it to the Porsche 917—the car maker had to build at least 25 of the super-high performance cars in order to meet the "production model" requirement of the racing rules.

Here are the list prices that Apple announced. Keep in mind that large corporate customers usually get a discount of about 30%, and universities and developers, who will be major buyers of the Portable, get even more.

Macintosh Portable with 1 Mb and floppy drive	**$5799**
Macintosh Portable with 1 Mb and 40 Mb hard drive	**$6499**
1 Mb RAM expansion card	**$649**
Internal 2400 baud Modem	**$449**
Spare battery	**$49**
Battery recharger	**$129**
Video adapter (not available yet)	

A wide variety of third-party add-ons were announced at the roll-out of the Mac Portable, including the all-important Automobile Power Adapter ($69.95) from Lind Electronic Design, Inc., and a new version of the *SoftPC* MS-DOS emulator (Insignia, Inc. $399). The "ScuzzyGraph II" unit made by Aura Systems, Inc. can be used to connect the Portable with an external color monitor, but, like the Mac SE, the computer only handles three bits per pixel, for a maximum of eight Crayola colors.

Dream Machine?

The design of the Macintosh Portable was probably frozen more than a year before its release. The design brilliantly meets the objectives of long battery life, full Macintosh functionality and superb screen resolution. Compared to the option of hauling a Mac SE around in a back pack, it is a big improvement.

On the other hand, it is hardly the Portable For The Rest of Us. Along with the high cost and weight, the non-standard slots and souped-up 68000 processor make this a specialized unit for very special needs. Apple used the 68000 CPU chip because no low-power CMOS version of the Motorola 68030 is available yet.

What the Rest of Us need is something like a Toshiba 1200 with a Macintosh chip set—the absolute minimum laptop that can still accommodate a hard disk. About eight pounds, maximum. Most of us could accept a smaller set of ports, a low-cost LCD screen of traditional Mac dimensions (512 x 342 pixels), and reduced battery capacity. Companies like Colby and Dynamac have attempted to fill this need by building portables around genuine Apple logic boards, but this is still a very costly way to make a computer.

The magic price point is probably around $1,000. At that point, a lot of corporations could afford to equip their field service and sales forces, many students and families could consider it as their only computer, and a lot of professionals could justify it as a second computer. Since a 50% gross margin has the same cosmic significance for Apple that the Prime Directive has for Star Fleet, this means a box that could be manufactured for about $500. Don't hold your breath.... ■

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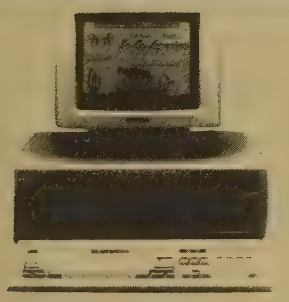

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- Monochrome Monitor
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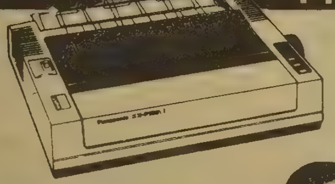

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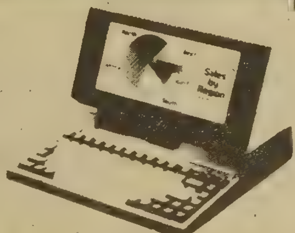

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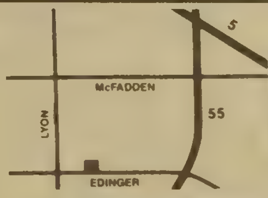

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P1 P2 P3 P4 P5

BY WAYNE YACCO

Buying The Right LAN, Part II

Last month we started this series on buying LANs for IBM personal computers or compatibles. In Part I, we looked at two acquisition strategies and began an example based on one of them which considers how the line of Novell NetWare might satisfy various system requirements. That installment covered ELS-1.

The series concludes by examining the remaining Novell alternatives and some additional considerations beyond basic system requirements.

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ELS-2

With the (precisely) right hardware and DOS combination, ELS-1 can be a very attractive entry to Novell networks.

If, on the other hand, you need support for up to eight simultaneous users and almost all of the features of Advanced NetWare, those capabilities are available in ELS-2. That's the system that MAS's Lasman recommends as a substitute for ELS-1. He feels that it eliminates virtually all the risks of incompatibility and still has a reasonable price.

ELS-2 supports more operating systems, adapters, hard disks, and controllers. It adds support for Token Ring, as well as LocalTalk and EtherTalk for Apple Macintosh computers and LaserWriters. Workstations can run all DOS versions over 1.x and all versions of OS/2. (Some add-on software is required to support OS/2 or Mac workstations—just as it is with Advanced or SFT NetWare.) Asynchronous communication (COM1 and COM2) is supported. There are provisions for resource accounting, network security, and basic system-fault tolerance (including read-after-write verification, duplicate directory structures, UPS monitoring, and on-the-fly compensation for media flaws). It's a nearly complete network, with the exception of supporting a very limited number of users. It also costs almost three times as much as ELS-1.

Copyright © 1989 by Wayne A. Yacco. All rights reserved. Wayne Yacco is editor-in-chief of Vulcan's Computer Buyer's Guide. *An editor, writer, and consultant specializing in microcomputers and their business applications, he writes articles, columns, and reviews for many trade and business publications. He can be reached at Box 269, Burbank, CA 91503.*

Advanced NetWare

This is the version of NetWare that software developers are most likely to use when they write and test their code. Advanced NetWare provides the features of ELS-2 for up to 100 users and can run all DOS versions over 1.x, all versions of OS/2 and PC-MOS/386.

Commensurate with its support for larger numbers of users, Advanced NetWare also has features that provide more control over network resources. It is a level that must be considered when maximum hardware compatibility, support for all NetWare-compatible software, or support for large numbers of users is required.

SFT NetWare

SFT offers the features of Advanced NetWare with the addition of extreme fault tolerance. It provides disk mirroring and duplexing, which write every transaction to two disks simultaneously over separate channels. This feature greatly reduces the likelihood that drive or controller errors will affect the integrity of data. If you must have greater assurance of data integrity, SFT is the best that Novell has to offer. It provides a relatively high level of protection from all likely risks.

NetWare 386

NetWare 386 has just been released, and although it is up to three times faster than other levels of NetWare and supports up to 250 users, it only runs on an 80386-based machine and still doesn't have a broad range of drivers.

However, it will eventually have the widest range of network support of all versions of NetWare. Nodes will be able to operate under a variety of client-server protocols, including DOS and NetWare Core Protocols (NCP), OS/2 and the Server Message Block (SMB), the Macintosh operating system and AppleTalk Filing Protocol (AFP), and UNIX with the Network File System (NFS). And the user will be able to add support for LAN and disk drivers, protocol stacks, and server utilities dynamically—without interrupting ongoing processes on the network.

In the first quarter of 1990, Novell will begin implementing its Open Protocol Technology (OPT) with the delivery of NetWare 386 version 3.1. OPT is a major advancement and part of a protocol engine which will dynamically manage most widely used protocols and allow communications among them. Interprocess Communications (IPC) protocols, including SPX, NetBIOS, Named Pipes, Transport Level Interface (TLI), Berkeley Sockets and APPC will all be supported. So will multiple transport protocols such as IPX, NetBEUI, AppleTalk, TCP/IP, SNA and OSI.

It remains to be seen how efficient the system will be in managing all of these activities, but this will be the version to choose if you need integrated access to resources from a wide variety of networks, hardware, and software platforms.

Plan For The Future

Shop not only for the system you need today but for the system as it will develop over its useful life. There are two important considerations that inexperienced system managers sometimes overlook: growth and turnpike effect.

Networks often evolve, add users, and become more difficult to manage. Ask users to consider growth when they estimate their needs, and then add 10 or 15 percent to the estimates to allow for turnpike effect. (Turnpike effect is the phenomenon in which the unexpected utility of a resource leads to more use than was originally forecast. It is named after the road-building projects, where it was first formally noticed, but it also commonly occurs when systems are computerized.)

Be sure there is an upgrade path if you plan to buy fewer resources than you will need when the system is mature. Then, compare the cost of a future upgrade with the cost of buying now the system into which you expect to grow.

For example, say you consider beginning with ELS NetWare, but your system is likely to outgrow ELS limitations before your network becomes obsolete. (All of Novell's ELS NetWare is designed with an upgrade path.) You should compare the cost of your prospective upgrades with the cost of starting with a more feature-laden system.

Be sure to include financing costs and the time value of money in your assessment. If it is possible that your system will grow rapidly and dramatically, you may want to use a more sophisticated evaluation that considers the expected value of alternative growth scenarios and the timing of various acquisition programs.

You're On Your Own

One of the problems in putting together any system is that salespeople have a natural aversion to emphasizing the negative. (After all, how many sales would they make if they listed a product's every limitation?) And they don't know every detail of your application, so they can't always selectively mention the limitations important to you.

However helpful their intentions, they may omit mentioning shortcomings of the products they sell, which may be critical to your application. It's up to you to carefully interpret the literature provided by the manufacturer, and when necessary and practical, to test components before you commit yourself.

Novell will help you resolve compatibility issues for its more capable systems if you call the toll-free information line: (800) LANKIND. (That's 800-526-5463 for those of you who hate to play Wheel of Fortune without Vanna.) For questions on the cut-and-dried ELS-1 they request that you call (801)379-5900. ■

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UNIX

BY BENNETT FALK

Table Manners: Resource Sharing And The Dining Philosophers

At the center of a round table in a faraway boarding house, there is a large bowl of steaming rice. Around this table are five place settings, and behind each place setting sits a philosopher. Five chopsticks, one between each pair of place settings, are the only utensils at the table.

The five philosophers lead a simple life: they spend their time thinking and eating. Of course, a philosopher who wishes to eat must first have in hand two chopsticks, and the etiquette of the boarding house requires that the hungry philosopher pick up his chopsticks in a seemly manner, one at a time. Indeed, rude behavior of any sort is frowned upon: there can be no grabbing of two chopsticks at once, no breaking of a single chopstick in two, no passing of chopsticks around the table, and no eating with fingers.

Successful multitasking requires that the CPU's undivided attention be given in short bursts to each process in succession. The scheduler's job is to manage these context switches to avoid the same problems that plagued the dining philosophers: deadlock and resource starvation.

Several things are clear about this peculiar lifestyle. At any given moment, no more than two of the five philosophers may eat. The arrangement of the chopsticks around the table ensures that when one philosopher is eating, neither of the philosophers seated next to him can pick up enough chopsticks to begin eating.

Naturally, the philosophers have their share of problems. If each of them picked up a single chopstick and refused to let it go, no one at the table would be able to eat. In the computer trade, this situation is called a "deadlock." In the philosophers' case, preventing deadlock is relatively easy. They must simply learn and live by certain rules: "Never pick up one chopstick unless both are available" or "If you have one chopstick in hand and the other is not available, put the first chopstick back on the table."

By treating with care the business of picking up chopsticks, the philosophers avoid deadlock. No one can allow himself to be distracted while picking up a chopstick or to hold on to one chopstick while there is no prospect of picking up another.

But even after they have taken precautions to avoid deadlock, the philosophers face other problems. How, for example, can the the five chopsticks be shared so that no one at the table starves to death? More information about the philosophers themselves is required for a solution to this problem. Are the philosophers all the same size? Do their nutritional requirements vary? How well do they perceive and express their own needs? And are they all equally adroit with chopsticks?

The Dining Philosophers Problem was proposed nearly 25 years ago by Edsger W. Dijkstra to illustrate some of the issues involved in coordinating computer processes that must share resources. Dijkstra's philosophers are thinly disguised autonomous processes in a computer; the etiquette they employ to prevent deadlock consists of algorithms, and the chopsticks are any computer resource the processes must share.

Nearly five years after the first appearance of the Dining Philosophers problem in computer literature, the first UNIX system was introduced, and with it, a certain way of scheduling the use of computer resources.

The Scheduler

UNIX is, above all, a time-sharing system. Its basic premise is that, on a multiuser computer, processor (or CPU) time is most efficiently managed by a constantly-running scheduler that monitors the priority of all the processes on the machine and ensures a fair distribution of the available resources.

For the person at the keyboard, the activity of the UNIX scheduler is dreary, bloodless stuff, and anyone who uses UNIX and has a lucky star should be thankful that the scheduler works behind users' backs.

The scheduler is a portion of the UNIX kernel that determines which of all the processes running concurrently will get the use of the CPU next. At any given instant, only one task will be running on a CPU. Successful multitasking requires that the CPU's undivided attention be given in short bursts to each process in succession. The scheduler's job is to manage these context switches to avoid the same problems that plagued the dining philosophers: deadlock and resource starvation.

The scheduler in the UNIX kernel tries to achieve these goals by ensuring two things: that the process chosen to run at any given instant is the process with the highest priority, and that all processes have a chance to use the CPU before any process repeats as the active process.

The scheduler gives each process the use of the CPU for fixed a period of time. The length of this "timeslice" varies with hardware architecture, but the timeslice on any CPU is the same for all processes. A process can give up the CPU voluntarily before the end of its timeslice if the process receives an interrupt, or if it needs to wait for some other operation (such as a disk read or write) to complete.

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At the end of its timeslice, however, a process must give up the CPU even if it could continue execution.

Because the UNIX scheduler can force processes to give up the CPU, it may be said to be "pre-emptive." However, it is important to note that the scheduler can only pre-empt a process because its timeslice is used up. (In a real time system, a "pre-emptive" scheduler should be able to evict processes for other reasons as well.)

When the scheduler evicts a process, it takes stock of what the evicted process was doing, assigns it a priority, and puts it on a queue of processes waiting for the CPU. The scheduler then evaluates the priorities of all the processes in this queue and chooses which one will use the CPU next.

The system of priorities used by the scheduler is complex. To begin with, UNIX processes are constantly moving back and forth between two "modes" of execution. A process is in "kernel mode" when it executes a system call. System calls are privileged instructions that give a program access to some hardware resource. When no system call is being executed, the process is said to be in "user mode."

In assigning priorities to tasks running in user mode, the scheduler tries to equalize CPU time: the more CPU time a user process has had recently, the less attractive it is to the scheduler.

Processes executing in kernel mode are treated differently. The scheduler tries to move processes through kernel mode as quickly as possible, and so any process in kernel mode automatically has a higher priority than a user mode process. The goal in scheduling kernel mode processes is to prevent bottlenecks as processes use other hardware resource. For processes in kernel mode, equalizing CPU time is at best a secondary consideration.

For the person at the keyboard, the activity of the UNIX scheduler is dreary, bloodless stuff, and anyone who uses UNIX and has a lucky star should be thankful that the scheduler works behind users' backs. The one observation worth making about the scheduler is that all it schedules is CPU time. Make no mistake, CPU time is a very important thing to schedule. However, once UNIX has duly noted that a system call is being made on some user's behalf, the operating system schedules the use of the CPU accordingly and inquires no further into who is using how much of what for how long.

This means that a lot of the responsibility for sharing the resources on a UNIX computer is left to the users themselves. Daily, in offices around the country, real people trying to share memory and disk drives and modems re-enact the drama of the dining philosophers and their chopsticks. Some people starve, some subsist, and others grow fat.

One could declare that resource sharing conflicts are nothing more than a computer problem. A different operating system with a more comprehensive algorithm for scheduling everything might solve such a problem. A "personal" computer that need never be shared with anyone might be just the ticket.

But such a declaration would be wrong. The real lesson of the dining philosophers is that something is lost when the issue of resource sharing is reduced to algorithms. A description of the UNIX scheduler is neither as instructive nor as engaging as the story of the philosophers' life-or-death table manners. There is a dimension to the story of the dining philosophers that an account of the UNIX scheduler does not have.

A lot of the responsibility for sharing the resources on a UNIX computer is left to the users themselves. Daily, in offices around the country, real people trying to share memory and disk drives and modems re-enact the drama of the dining philosophers.

The philosophers are a reminder that doing something on a computer really is another form of human behavior in general, and that every decision about what to do and how to do it involves the computer user in ethical questions. Quite apart from its user interface (which is not as awkward as people pretend), there is an "ethical interface" to UNIX that must be mastered. No one can claim to have learned the system until they have learned to get along with the people who use it. ■

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BUSINESS COMPUTING

BY SUZANNA MUSICK

Standards In The Office

File-Naming Conventions And Why You Need Them

About a month ago we hired a new computer consultant. Previously he had been an independent contractor who specialized in installing accounting software, so he naturally fits right into our department.

Here's the rub. Recently he wrote a proposal for a new client and I went to edit it, but, much to my chagrin, I couldn't find the file. Now I haven't had to deal with this issue in so long that it really made me think about how important it is to account for where your files are located on your computer. This is accomplished by creating standards that everyone can live/write by.

Whether you have one computer or hundreds of computers, creating and enforcing file-naming conventions and storage standards is something that deserves serious consideration. The computer revolution was largely ushered in by word processing and electronic spreadsheets. The beauty of these applications is that they give us the ability to correct, expand, contract, rearrange, modify, add, delete, etc. the work we previously produced. But only if we can find the original file.

Whether you have one computer or hundreds of computers, creating and enforcing file-naming conventions and storage standards is a matter that deserves serious consideration.

Copyright © 1989 by Suzanna Musick. All rights reserved. Suzanna Musick is a Manager in the Computer Consulting Department of Hemming Morse Inc., CPAs. Her experience encompasses a wide range of industries such as distribution, retail, construction, real estate, financial and professional services.

I find that even on my own personal hard disk, as opposed to our network, I have a hard time remembering what I named a file even just a few weeks before. And with only eleven characters to use for word processing and eight for spreadsheets (on the PC, anyway), you have to be pretty creative in naming your files.

In our office one secretary works for a number of different people. He or she is assigned to a department, not to a person. For instance, we have an audit secretary, a tax secretary, a litigation secretary, and a secretary shared by consulting and human resources. When one secretary is swamped, another will help out, and even the receptionist has a computer to help prepare documents.

With all of these people sharing administrative support, we had to devise a way of locating documents once they were created and saved. I thought that by using our firm as an example and explaining how we have managed to keep track of our documents, Ill be able to give you some ideas on how to manage your own.

A Real-Life Example: What We Do And Why

Actually, we have more than one standard in our office. For audits and other similar work that is performed year after year for the same client, the files are named with the first six characters of the client's name, the next two characters designate the year, and the extension is used to indicate the type of work. For example, Smith, Jones & Davis's 1988 financial statements are named "SMITHJ88.FS." The engagement letter is filed under "SMITHJ88.ENG" and the management letter that accompanies the financial statements can be found under "SMITHJ88.MGT."

In addition to the original copy on the audit secretary's hard disk, another copy is stored on a floppy disk. A separate floppy disk is kept for each client and filed alphabetically. All files relating to that client are stored on that disk and are available should anything happen to the copy on the hard disk.

The auditors use our *focus:ABC* audit program to perform the field work for the client. The program is loaded on a portable computer and taken to the client's office while the work is being done. Any audit software program is setup-intensive. It can take ten to 15 hours to initially enter the client's chart of accounts and beginning balances before the audit work actually begins. Once the audit is complete and the final journal entries have been booked, it is not unusual to have up to 20 hours' worth of time invested. You can see why we want to easily locate these data files when the audit begins again next year.

It was when we installed the network and wanted to share more information that standards became absolutely necessary.

To facilitate this, audit data files are labeled and filed similarly to the secretary's documents: the first six characters of the client's name, and then the year. Since *focus:ABC* is a *Lotus* template, all of the files have the ".WK1" extension. Once the audit is complete, two copies of the files are made off of the hard disk onto floppy disks. The files on the hard disk are then erased to make room for another client's data. One set of floppy disks is kept in the client file with the work papers; the other is a backup and is stored alphabetically by the receptionist.

Miscellaneous letters, memos and other documents prepared for the directors, managers, and other staff members are given an eight-character description as a name; the extension is the originator's initials. One director likes all of his files named with the date, so for him a memo created on October 15, 1989 would be named 101589MM.WRP. A letter would be 101589LT.WRP.

Personally I don't find this approach very convenient. I rapidly forget when I wrote a letter, but I seldom forget who it went to or what the subject matter was. That brings us to the standards used to account for files in the consulting department.

Since we will not start a project until we have a signed engagement letter, we are constantly writing

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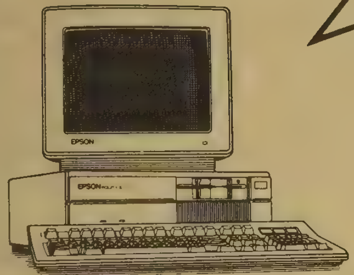

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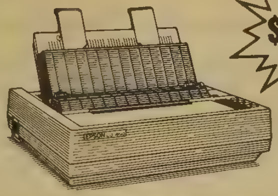

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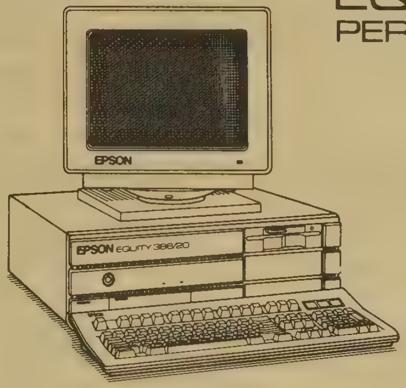

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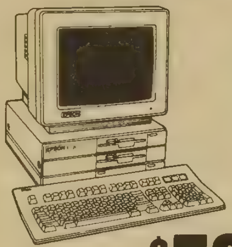

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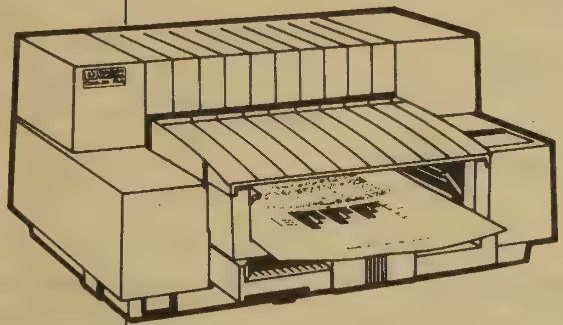

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engagement letters. These proposals normally include a budget that we have created in *Lotus* or *Excel*. In addition, we write status and/or management letters, we create needs analysis documents, and we write operating procedures for the specific accounting software programs we support.

We store all of these documents on our network so that we all have access to a client's files at any time. In fact, it was when we installed the network and wanted to share more information that standards became absolutely necessary.

Normally we create a draft of the engagement letter; then our secretary retrieves the document, formats it to our standards with the correct margins, fonts, spacing, etc. In order for her to quickly locate the file, we use a system similar to that of the other secretaries, with some minor modifications.

By the nature of our business, if we do a good job of consulting, we work our way out of the client's office. We seldom work on the same client year after year. For this reason, we use all of the eight characters available to designate the client's name for the file. The three-character extension tells us whether it is the engagement letter (".ENG"), a status letter (".STA"), or an invoice (".INV".)

Since the extension is not available with *Lotus* or *Excel*, all budgets start with a "B" followed by the first seven characters of the client name, e.g., "BSMITHJO." These files then either have a ".WK1" or ".XLS" extension. The same is true for needs analyses worksheets, only we substitute a "N" (to indicate it is a needs analysis) for the "B." All of the client documents are stored together on the network in a separate directory called "CCS" (Computer Consulting Services). Now, with this knowledge in hand, any consultant or secretary can find a client file with ease.

The accounting software operating procedures are stored in a separate directory (and a separate virtual drive). Since we write procedures for each separate function (or module), and since every program has many of the same functions, we have devised a way to keep these organized.

To start with, the first two digits of the file name represent the module, e.g. "AP," "AR," "GL." The last six digits of the file name are used to describe the procedure, e.g. "DAILY," "WEEKLY," "EOM" (end of month), etc. The three-character extension is used to designate the software program; ".SOL" indicates *Solomon* procedures, ".PLA" is *Platinum*, etc. Now when we see a file name "APEOM.SOL" we know it is the accounts payable end-of-month procedures for *Solomon.*

Often we customize these procedures for a specific client. When we do this, we change the extension to represent the client's name. Since we know what software the client is using, this method preserves the description of the particular function. In this example the file name would be "APDAILY.SMI" for Smith, Jones & Davis's accounts payable daily operating procedures.

Conclusions

While no one rule will work for all situations, we strive to keep our standards to a minimum. If you keep your standards as simple and meaningful as possible, they will not lose their effectiveness by being too difficult to remember.

Once we examined the type of documents we were creating and decided on our standards, we wrote up a document explaining how they work. Now when new employees start work, they are given that document. They may forget once or twice, but soon they learn the system and see the value of everyone using the same conventions, and finally—presto—we have ended the search for lost files.

The point is, if you lose track of a document, you really aren't any better off than if you have a fancy typewriter.

Our firm is fairly large and diverse in the type of work each department produces. I completely skipped the Tax Department's standards in this article, but you get the idea. Look at the type of documents being created by your company. Put some ideas down and circulate them to the people who will have to conform to these standards. In the process, someone may spot a reason why a certain pattern will not work, or will have a better idea about how to structure the file names. It took us some experimenting to finally work ours out to where it now runs smoothly.

The point is, if you lose track of a document, you really aren't any better off than if you have a fancy typewriter. And the faster you can locate that particular file, the less frustrated and the more productive you and everyone else will be.

Until next month, happy computing. ■

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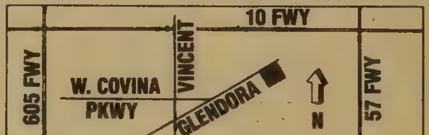

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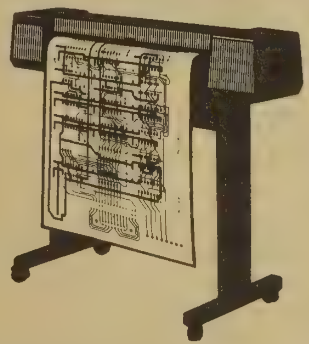

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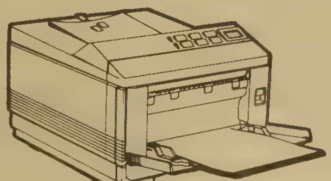

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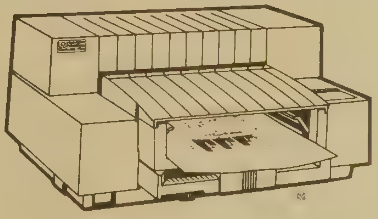

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ATARI ST

BY DAVID HAWKINS

Let's Play

Games For The ST

Just when I think I've gotten over my addiction to computer games, a new batch shows up. Unfortunately I can't write this column and play games at the same time, so I'm taking a break.

Shufflepuck

The game I've had the most fun with is *Shufflepuck Cafe*, from Brøderbund Software, 17 Paul Drive, San Rafael, CA 94903. Good graphics, and challenging enough to keep my interest, but also simple enough for me to get addicted.

This game comes with a poster that shows the opening screen —nine opponents that you have to beat in a tournament. You can also play them individually. The back of the poster describes each of the other players and gives some hints on how you might want to play them.

If you click on a character, you start up an individual game. This also allows you to modify your paddle, if you want to change your odds. If you click on the "droid," you can modify his characteristics as well.

All of the characters are interesting, and make interesting movements and sounds during the game. There's a nerd who says "Nice shot!" each time you smash a shot past him. Also, there's an alien whose eyes are at table level—his eyes cross when you get a shot past him and he sniffles a little when you beat him. I like the lizard that takes a drink of champagne each time he gets a point—but the alcohol seems to affect his play after a while.

I really like this game. I'm about halfway through the tournament. This one's a nice game to go back to from time to time.

Jump On The Cycle

Slightly more complex is *Powerdrome* from Electronic Arts, PO Box 7578, San Mateo, CA 94403, (415)572-ARTS. You're racing a jet-powered cycle that has different types of aerofoils. This game is so complex that I had to read the manual—and even then I was pretty frustrated. Then I found a section at the end called "Piloting Tips" that helped me get the cycle around the track a few times.

In general I find that riding/flying simulation games get too technical for me. If this is the type of game you like, I'd recommend that you stop by a dealer's and see what some of these look like. *Powerdrome* might be for you, but three times around the oval practice track is more than enough for me.

Copyright © 1989 by David Hawkins. All rights reserved. David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco. Both monitors, an Okimate 20 color printer, and disks are all over the room.

Arduous Growth

The next two games are from SSI, 675 Almanor Avenue, Sunnyvale, CA 94086. The games are similar, even though one of them is set in the Dungeons and Dragons world, and the other is from the far-off future. Both involve choosing a character or a team, then slowly providing them with training and equipment. Where one game has a magic-user, the other has the ESPer.

Hillsfar

The Dungeons and Dragons game is *Hillsfar*. It's actually labeled as an Official Advanced Dungeons & Dragons Computer Product. You are camped outside the city of Hillsfar and can create characters to go into the city. They can steal items, explore buildings, pick locks, train at the target range, and visit the guilds.

Some parts of *Hillsfar* are arcade-like. When you're riding a horse you have to duck under limbs and birds and jump various obstacles. Blow it too often, and your horse will ditch you and you'll have to walk. When you're exploring buildings in the city there's a limited amount of time to pick locks, open cases, and find the exit.

I think that *Hillsfar* is playable, but I don't find it too exciting. The graphics are okay, but don't show what the ST is capable of. I think that some companies port games from the IBM or the C-64 without any thought to making the game look as good as possible on the new machine. *Hillsfar* isn't up to the level of *Phantasie II* or *III*, both of which are also from SSI.

> ***The game I've had the most fun with is Shufflepuck Cafe, from Brøderbund Software. Good graphics, and challenging enough to keep my interest, but also simple enough for me to get addicted.***

Then To The Stars

Star Command was the second game from SSI. I wasn't able to get excited about this one at all. The crew selection process is about as boring as it is possible to make it. Again, comparing it to *Phantasie II* or *III* might have given the programmers some idea of how to make it more interesting in the startup section of the game.

The second reason I didn't play it much was that SSI said this release copy had a virus in it. The replacement copy hadn't arrived by deadline, and I wasn't that crazy about playing it too much—and sure didn't want to install it on my hard disk! Maybe this is a reminder that when you play a game, from whatever source, it's a good idea to unplug the hard disk and just play the game off of floppies.

Not Exactly CTS

In an earlier column I mentioned having some pain in my hands/wrist that I thought was Carpal Tunnel Syndrome. I finally went to the doctor last Friday and it's not exactly CTS, but something similar. She gave me a wrist splint to wear and in just two days all the pain cleared up. Kind of makes me wish I'd gone in four months ago when this started. ■

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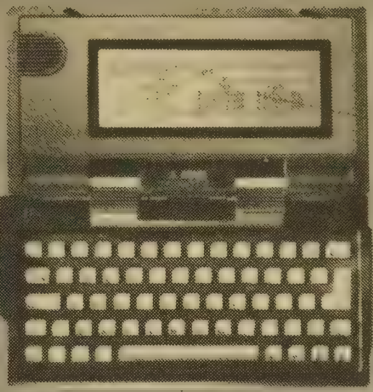

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AMIGA

BY MATTHEW LEEDS

AmiEXPO Report

If this year's AmiEXPO show in Santa Clara is any indication of the state of Amiga interest and development, then the Amiga is in for rough times.

Looking more like a swap meet than a real computer trade show, the show suffered poor attendance from both vendors and attendees (20% of the vendors listed in the show catalog were no-shows). Aside from NewTek and WordPerfect, exhibitors settled for the standard pipe and drape booths, often without any signage other than the white cardboard booth identifier hung from wire hooks at the back of the booth.

If you've ever attended a Macworld, a Video Expo, or other professional trade show, you'll understand what I mean. I could not imagine a corporate buyer from a major company (the type of account Commodore has said it's after) coming to the show and doing more than taking a quick look around and then leaving. There was no evidence that the Amiga is a computer to be taken seriously by business.

I could not imagine a corporate buyer from a major company coming to the AmiExpo and doing more than taking a quick look around and leaving. There was no evidence that the Amiga is a computer to be taken seriously by business.

Even with the overall unprofessional appearance of the show, there were some notable new products introduced, some innovative new ideas shown, and some noble attempts made. Although I'm uncertain whether the Amiga will ever have a shot at being accepted as a machine for general business use, it still attracts some of the brightest development talent.

Copyright ©1989. All rights reserved. Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.

•**A-Squared Distributions** showed *The Art Of GO*, a 4,000-year-old game of strategy. This is an excellent version of the classic, offering three modes of computer and human interaction, a running explanation of the computer's reasoning, annotation of games, a software tutorial, handicapping, and the ability to print out a game.

•**Advanced Gravis** showed an Amiga version of their Mousestick optical controller. The Mousestick is a 1200-line-resolution optical input device that looks much like a joystick. It can emulate either a mouse or joystick, has three programmable buttons, can be adjusted for any screen resolution, can be programmed and will store programming, and has excellent handling characteristics.

•**Brown-Wagh** showed a new version of *Pen Pal*, with support for changing font directories within the program, optional closing of Workbench on minimum memory systems, better printer support, and improved file export. The new version is a free upgrade to all registered *Pen Pal* users. They also showed a new business graphics program, *BGraphics*. This is the kind of software the Amiga needs to be accepted as a business solution. I'll be taking a look at this program when it's released later this year.

•**Centaur Software** was showing *Centaur World Atlas*, an educational computerized atlas. This appeared to be an import from Europe, with excellent graphics, but some problems in user interface. The current version was designed to run only from floppy, and you must re-boot to exit the program. With some additional work, this could be a useful and interesting program, but for now, I'd suggest a preview at your dealer's before you buy.

•**Creative Microsystems** displayed the MultiPort Board, providing RS-232 serial port, RS-422 Mac serial port, and DB-23 parallel port connections. Options include a SCSI hard disk interface and 2Mb RAM daughterboard. When used with the CMInet software, the MultiPort Board supports the AppleTalk Protocol, allowing access to a Macintosh AppleTalk network. You can currently gain access to a networked laser printer, read Amiga files between Amigas on the network, and exchange messages. In the future, you will be able to gain full network access to all hardware, write files remotely, and pass files between Macs and Amigas. Creative Microsystems is also working on a Digital Frame Buffer for the A2000 with genlock, 24-bit color, hardware pan and zoom, digital capture, and support for rendering software packages. More details as they come in.

•**The Desktop Advantage** introduced the Pro-Res Still Video interface. This is a color separator and enhancer that can be used in automatic operation with NewTek's *Digi-View*. It accepts a color video signal as input- and outputs-separated R, G, and B signals. Controls allow adjustment of the contrast, brightness, sharpness, color balance, and tint of the video signal. Used with *Digi-View*, it emulates the Digi-Droid, and sends each separated color as prompted. It works with any color-still video source.

•**Digital Animation Productions** showed the SANG transputer board for the A2000. The SANG board supports either the T800 or T425 transputers, supports up to 32 Mb per board, with a performance of up to 15 MIPS per transputer.

Although I'm uncertain whether the Amiga will ever have a shot at being accepted as a machine for general business use, it still attracts some of the brightest development talent.

•**Digital Creations** showed the Supergen 2000, the core of its new video system for the Amiga. The Supergen 2000 is the only internal genlock for the A2000 that transcodes between NTSC and Y/C video signals.

•**Elan Design** showed the new version of *InVision, InVision Plus*. The new version provides new effects, full ANIM format compatibility, and a new still-image capture capability that offers dramatic still-image quality in all resolution modes, including HAM.

•**Interactive Video Systems** continued to expand their hard disk support for the ReadySoft A-MAX Mac emulator. They now offer hard disk partitioning with both Amiga and Mac operating systems installed, one on each partition.

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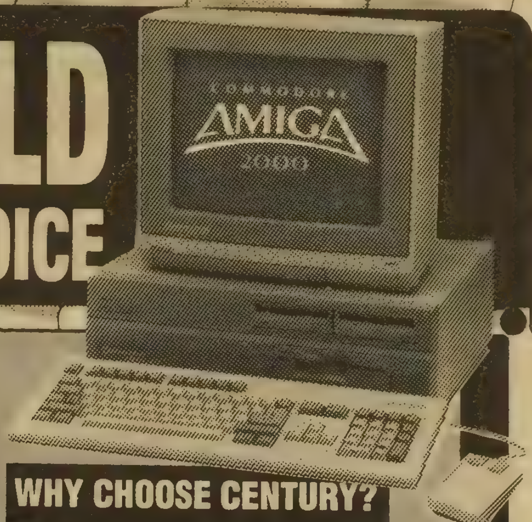

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•**Intuitive Technologies** showed the latest version of *UltraCard*, the hypertext tool for the Amiga. *UltraCard* V1.4 has expanded digitized sound capabilities and support for color cycling and overscan. Also announced was *UltraCard Plus*, an enhanced form of *UltraCard* that accepts external code modules that let programmers add their own features to *UltraCard* via XCODE modules. *UltraCard Plus* also allows multiple stacks to be open simultaneously, and supports communication between stacks.

•**LaserUp! Software** demonstrated *LaserUp! Draw*, a structured drawing program. Draw offers outline screen fonts, curves, auto-tracing, a halftone editor, rotated text, reflect, shear, rotate and scale, IFF and EPS formats, color separations, and PMS spot color. On-line help is also provided.

•**NewTek** showed the Toaster (again) and *Digi-Paint 3*. They also showed a new capture and display capability for *DigiView* that should become available soon. This new mode dramatically improves the quality of images digitized with *DigiView*, but it is not compatible with any other existing software, including *Digi-Paint 3*. NewTek will be releasing the details of this new format in hopes that other developers will add support for this new display mode.

•**Premier Software** displayed their collection of public domain and shareware software. Premier takes the time to sort and organize the vast flow of PD software, and makes sure that all doc files are accessible via icon, and that all support files are on the disk. Their entire collection is cataloged on a single disk. If you have trouble using other collections, these might solve your problems.

•**Taliesin** showed a preview of their structured drawing program. This looks to be a hot area, since Gold Disk's *ProDraw* has drawn lackluster reviews. Taliesin's *ProVector* offers support for IFF, PostScript, and their native format. It uses Bezier curves, supports an extended palette via the use of dithered colors (256 onscreen from 16 million), makes good use of the Amiga's Intuition interface, and heavily supports AREXX. This package should be out in the first quarter of next year.

•**Virtual Reality Laboratories** has acquired the rights to *Galileo*, now renamed *Distant Suns* to avoid trademark conflicts. The new version runs 300% faster and has a variety of new features, including full screen sky (all buttons hidden), new expansion disks, and additional star catalogs.

•**Word Perfect** recently started shipping the maintainance update to their word processing program, and they were demonstrating the improvements. The major changes are improved file requesters, better user interface, and improved response times.

•**Zuma Group** has released *TV*TEXT Professional*. It now supports EHB mode, 16 colors in high res, color fonts, and has added metallic, glow, and strobe effects, and color animation effects like glint and sheen. This new professional version is easier to use, and includes volumes 1-3 of *Zuma Fonts*.

That wraps up the show coverage. Over the next few months I'll be reviewing some of the software I picked up at the show. In the meantime, keep your eyes peeled for the Amiga commercial on TV, and the print ads appearing in major magazines. ■

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LaserUp! Software
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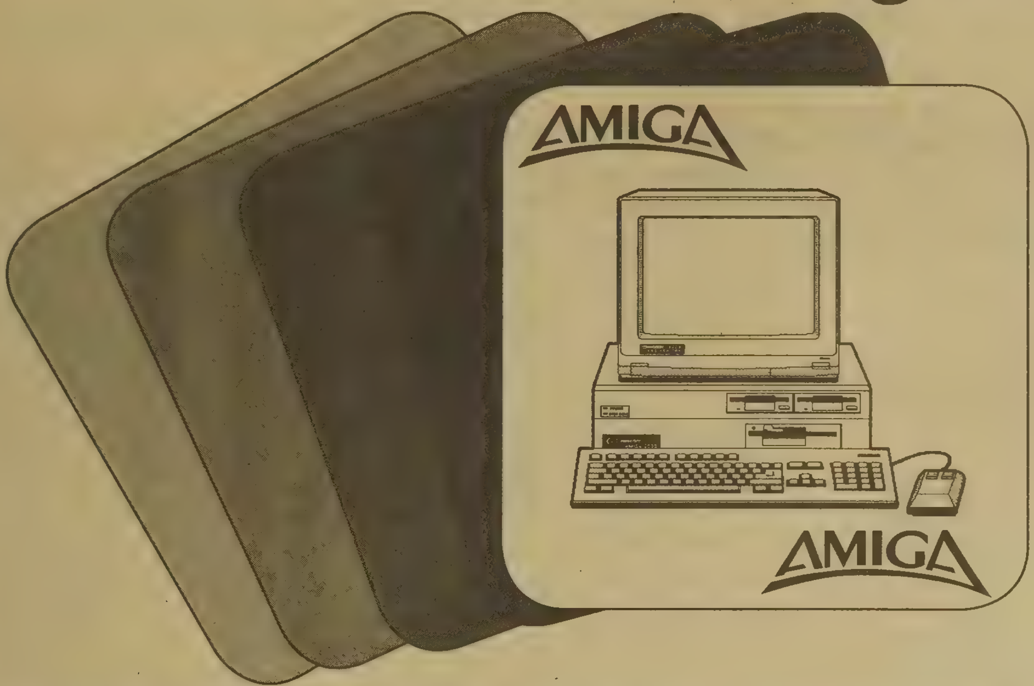

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USER GROUP NETWORK

BY MARY EISENHART

Mac Music, PrintMaster Software Amnesty, Novell In Orange County

On the margin of the new listing he just sent us, **Bob Jaffer** of Huntington Beach says, post-quake, "I hope you folks are all OK..." So, first of all, thanks for all the inquiries, and yes, we at MicroTimes are all doing just fine, thank you.

The listing Bob sent was for the **Orange County MAS.90 Accounting Software Users' Group**, which meets on first Tuesdays at 6:30 pm. Call Bob at (714)962-4760 for details.

Moving right along—**Steve Gellman** of our sister publication BAM would like to remind you about **MacMusicFest 3.0**, a big trade show featuring the latest in Mac-based computer systems, music software and synthesizers, as well as comprehensive lectures and workships featuring presentations by computer industry luminaries and entertainment professionals. BAM's sponsoring the show, which is being produced by **Apple Computer** and **MEGA (Macintosh Entertainment Guild of America)**. If you want to see the latest on Macintosh in the music industry, this is the place.

MacMusicFest 3.0 takes place on December 2-3, 11 am to 6 pm, at Paramount Pictures, 5555 Melrose Avenue in Los Angeles. Would-be exhibitors are encouraged to call Live Time, Inc., which is in charge of exhibit management, at (213)668-1811. To request an attendee package and brochure, call MEGA at (213)468-5496.

Michael Cahlin sends us news on behalf of **Kyocera Unison World**, which has adopted a piracy-fighting strategy originated by **XTree Company**. From October 1, 1989, to January 31, 1990, Unison World is offering an amnesty to the estimated one million users of illegal copies of PrintMaster. Under the **SAFE (Software Amnesty For Everyone)** program, unauthorized users need only print and send any screen display or work output generated by PrintMaster, along with a one-time payment of $24. In return, they'll receive the latest authorized version, complete with manual, which is a $59.95 value. Also, they'll get free tech support by phone, a subscription to the company newsletter, and eligibility for future upgrades.

So if you're a PrintMaster pirate who wants to come clean, now's your chance. Call Unison World at (415)748-6670 for further info.

Good news for Novell users and professionals in Orange County—the **Orange County NetWare Users Group** is now having regular general meetings and SIG gatherings in various Orange County locations. It's open to all individuals, users, dealers and consultants interested in networking, and there are currently two Special Interest Groups, the **NetWare Supervisor/User SIG** and the **NetWare Communication SIG**. **Frank Goodyear**, the group's president, will be glad to give you further information about meeting times and locations if you call him at (714)662-2410.

Finally, **Rita Zokaei**, who's kept us up-to-date on the doings of the **Silicon Valley Computer Society** for some time now, has something new: the **California Women's Computer Society**, which she announced October 12 at a meeting at Oracle's new headquarters. The CWCS mission: "to increase the computer literacy of women through its user group activities." Education, community outreach, mentoring, and the formation of a Y-chromosome "old-boy network" are among the organization's plans; the October 12 meeting included women from Oracle, Apple, Compaq, Sun, the Society of Women Engineers, UC Berkeley, San Jose State, Claris, Northern Telecom... Well, you get the idea. So if the gender gap in high-tech is something you want to do something about, give Rita a call at (415)574-8225.

On that cheerful note, I'll say goodbye for now, but don't forget to keep that information coming. US Mail should go to User Group Network, 5951 Canning Street, Oakland, CA 94609. Faxes are welcome at (415)652-4618 or (213)467-5486. Email can be sent to **microx** on **The WELL** (415/332-4335), **MICROTIMES** on **MacNET**, or **{pacbell, hplabs, ucbvax, apple}!well!microx** on uucp. Thanks, and have a great month! ■

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Janis II. (03)255-8856. 24 hrs, 1200/2400/9600. Japan Newsbytes, USA Today, InfoMat magazine, Online Digital Music Review. Over 500 megs info & D/L Pgms on HDD. Sysop: Pete Perkins. Voice: (03)255-8880.

Remote Bulletin Board (Singapore). (065)445-1646. 9600/2400/1200 24 hrs. 218 MB Online (IBM upload/download). Sysop: Umar A. Rahman.

203

Terrapin Station. (203)656-0134. Grateful Dead Board. Sysop: Klaus and Gretchen Bender.

209

Bertha Board BBS (209)239-9853, 300/1200/2400, 8-N-1, 24 hrs. MS-DOS, others. 95 Mb online. Emphasis on programming. Uploads and downloads. No fee but registration required. Sysop: Kenneth Roach.

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The Pathfinder. (209)474-1422, 8-N-1 24 hrs, 300/1200/2400. Message base, MS-DOS software, 2 chess game areas w/player ranking system. Also lively Trade Ware 1000 campaign. Sysop: David Lanphear.

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Ann Leung's Best Buys. (213)372-4050. Realestate in LA South Bay. Best buys are compiled daily by Gloria Kung. Type GO BEST upon entry.

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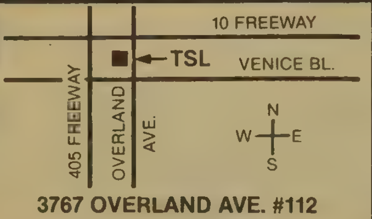

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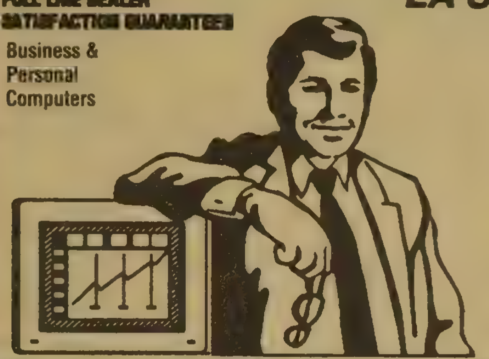

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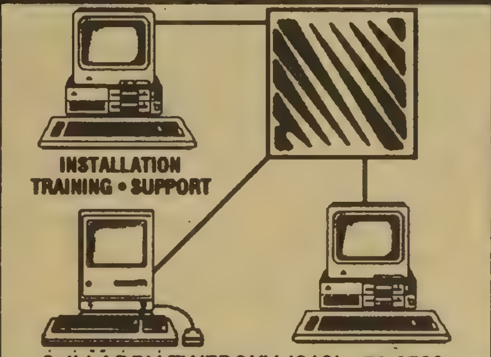

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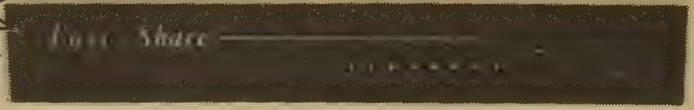

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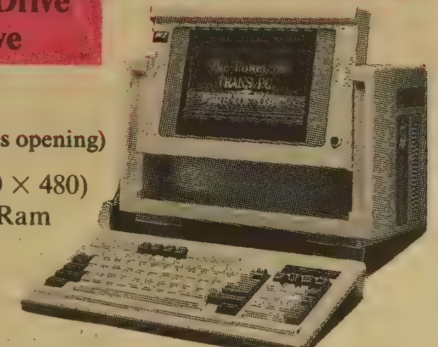

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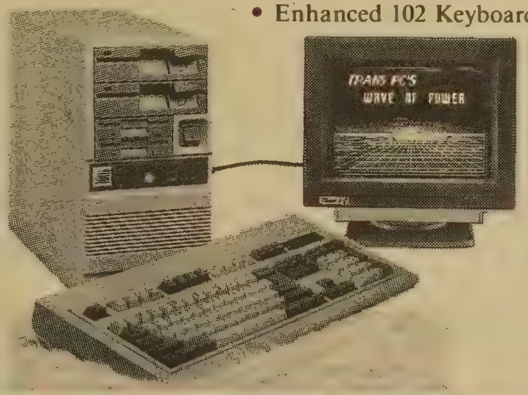

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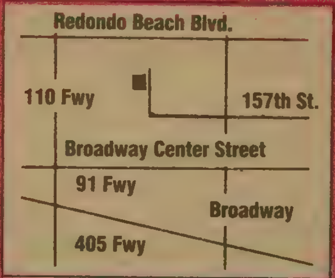

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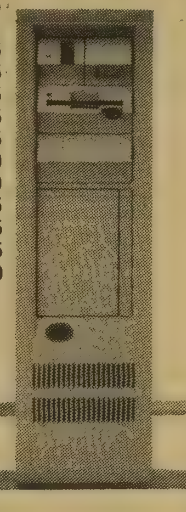

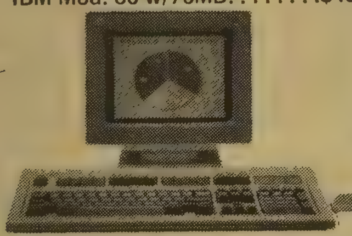

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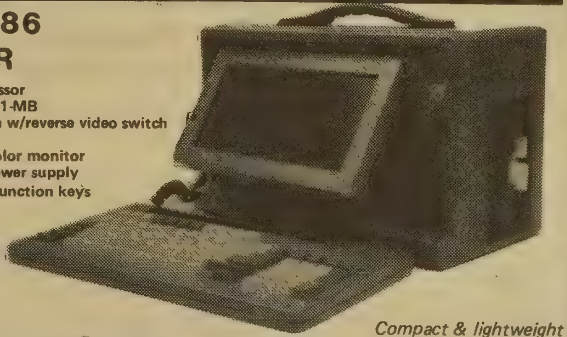

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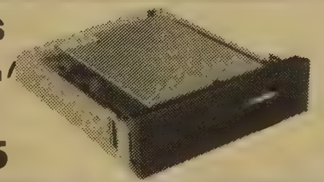

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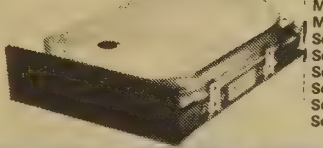

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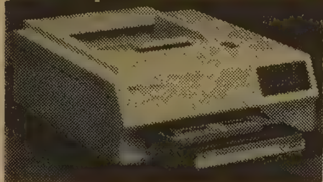

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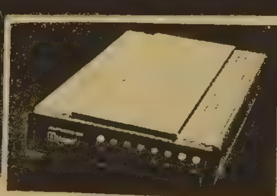

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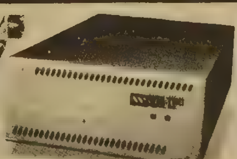

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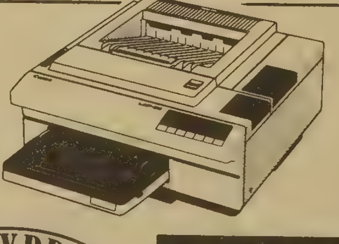

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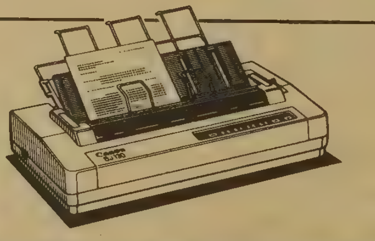

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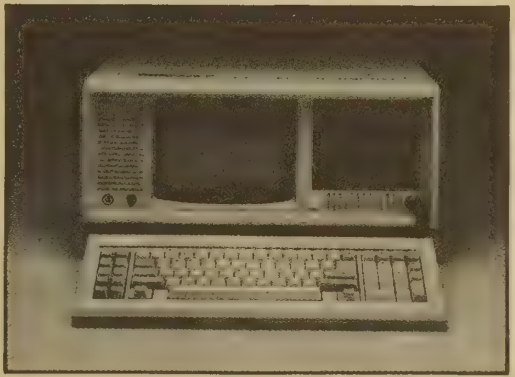

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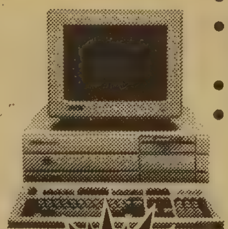

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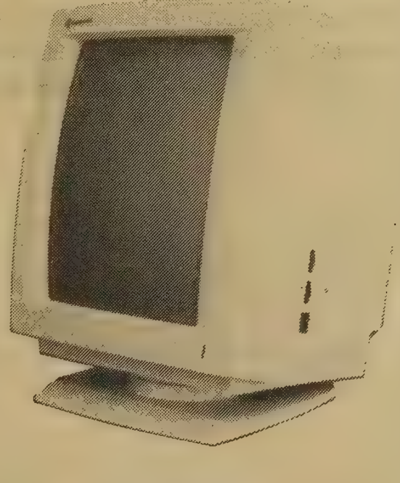

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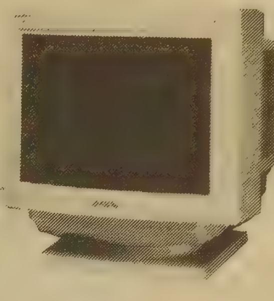

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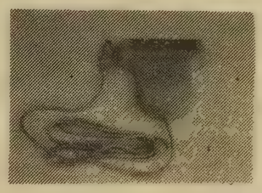

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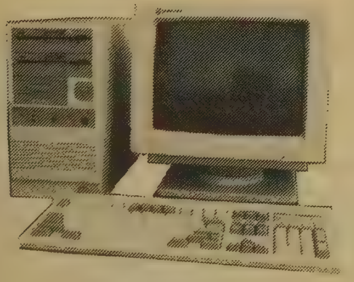

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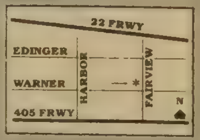

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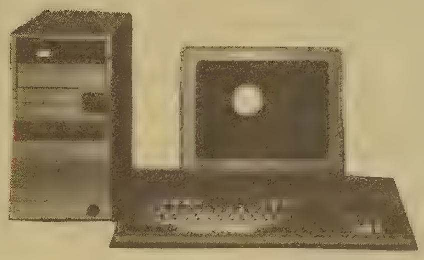

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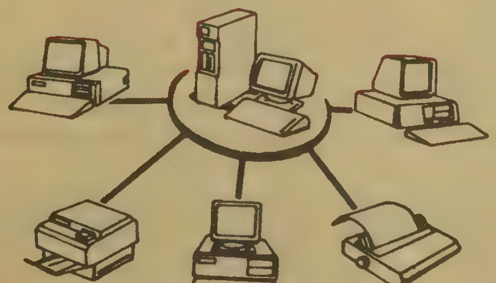

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Amiga Special Interest Group. Meetings: 1st Sunday except holidays. Chapman College, 333 N. Glassell, Orange, CA. Amiga SIG is part of the North Orange County Computer Club, a thousand member organization together 12 years.

Amiga User's Group Of Long Beach. Meetings: 3rd Sundays, 1 pm, Mid-Cities National Bank, Lakewood and Artesia, Bellflower. Tech, Beginners, Video/Graphics SIGs. (213)422-8226/432-2088.

Bits & Pieces Amiga Group of Anaheim. Meetings: each Tues. 6:30-10 PM 1130-A North Kraemer Blvd., Anaheim, CA. DOS Classes, tech. help & more. BBS: (714)630-8897.

LAAUG-Los Angeles Amiga Users Group. Meeting: 3rd Wednesdays @ 7:30 PM. Veteran's Auditorium at Overland Ave. & Culver Blvd. Many SIGs, Rookie, music, video, monthly PD disks. Call: (213)858-8073.

Pacific Computer Club. Meetings: 2nd Thurs. 7 PM 391 S. Madison, Pasadena, CA.

San Fernando Valley Amiga Users Group (SFVAUG). Meetings: last Tuesdays, 7 pm, The Meeting Room, Fallbrook Mall, 6507 Fallbrook Ave, Canoga Park. Call: Tony, (818)985-0476.

South Bay Amiga Dudes. Meetings: 3rd Thursdays, 7 pm, Redondo Beach Blvd., Lawndale. Call: Charlie Breene at (213)540-2834.

South Orange Commodore Klub (SOCK). Meetings: 3rd Saturday 9:00 A.M. Union Savings, 23688 El Toro Road, El Toro, CA. For Commodore 64/128 users and Amiga users. One-hour general meeting is followed by separate group meetings for each.

AMSTRAD

Amstrad Users Club Of Orange County. Meetings: 3rd Saturdays, 10 am til 2 pm. Board Room upstairs in the Santa Ana Library, Civic Center & Ross Streets. For more information call: (714)953-6471.

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Apple/Valley Computer Club. Meetings: 2nd Wednesdays, 7:30 pm, Valley Presbyterian Hospital, meeting room #3. Discussion on Apple, Mac, Amiga, IBM. BBS: (818)782-6471. Up loading/down loading. Visitors welcome. Eamon games, misc. Voice: (818)988-1752.

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North Orange County Computer Club Atari ST SIG. Meetings: First Sundays, Chapman College in Orange. (714)552-5185, or Bill, 633-4665, or Mac, 751-3090.

Santa Clarita Valley Atari Computer Enthusiasts (SCVACE). Meetings: 1st Thurs. 7PM Mint Canyon Moose Lodge, 18000 W. Sierra Hwy, Canyon County. 8-bit group. Atari ST special group now forming.

South Bay Atari Computer Enthusiasts (SBACE). Meetings: 2nd Tuesdays, 7:30 pm, Lomita VFW Hall, 1865 W. Lomita Blvd., Call: Alan, (213)542-7870.

West LA Atari Users Group. Meetings: 1st & 3rd Wednesdays, 7:30 pm, The Federated Group store, Santa Monica. Call: Bill, (213)559-2349.

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Fresno Clipper User Group. Meeting: 4th Thursdays, 7:00 pm. Call: John Rogers, (209)251-7527.

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Orange County Clipper User Group. Meeting: 4th Thursdays, 7:00 pm. Call: Steve Hilton, (714)847-7123.

San Diego Clipper User Group. Meeting: 4th Tuesdays, 7:30 pm. Call: Mick Keily, (619)569-8234.

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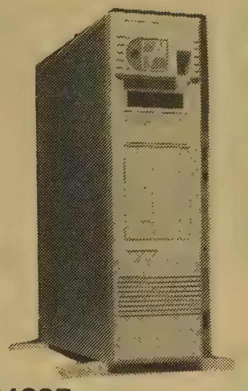

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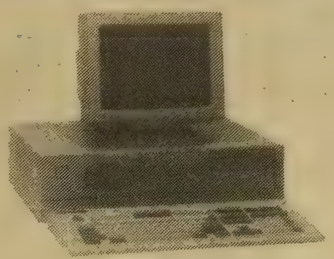

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C–128 West Commodore User Group. Meetings: 2nd Tuesdays, 7 pm, McKinley School auditorium, Santa Monica Blvd. (except during summer). Call: 6–9 pm, John Calhoun, (818)331-1589.

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Orange County Commodore Technical Users Group (C-TUG). Meetings: 4th Sun. 11:00 AM, 4th & Tustin, P.O. 1497, Costa Mesa, CA 92628. Newsletter; 2 BBS's; door prizes; demos, raffles, speakers, (714)750-3003.

Pacific Computer Club. Meetings: 2nd Thurs. 7 PM 391 S. Madison, Pasadena, CA.

Pasadena Commodore Computer Club. Meetings: 1st and 3rd Weds. 7:00 PM Circadian Room, Pasadena City College Cafeteria. Colorado Blvd & Hill, Pasadena. Call (818)447-2212 after 2:30 PST or write P.O. Box 163, Arcadia, CA 91006. Supports C64 and 128 machines.

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South Bay Commodore Users' Group. Meetings: 4th Tuesdays, 7:00 pm, Home Federal Savings Conference Room, 1670 Pacific Coast Highway, Redondo Beach.

South California Commodore Users Group. Meetings: 3rd Tuesday each month, 7:00 P.M., MidCities National Bank, Lakewood and Artesia Blvds., Bellflower, CA.

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The Orange County Commodore Club. Meeting: 4th Saturdays, 11:00 am, Mercury Savings And Loan, Mercury Room, 7812 Edinger Ave., Huntington Beach, Call: Mike Moore at (714)968-6250, or Howard Phillips at (213)861-4165.

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UCLA PCUG dBASE SIG. Meetings: 3rd Wednesdays, 7:30 pm. Call: (213)874-7471.

Valley West dBASE Users Group. Meetings: 3rd Mon. 7:00 PM Blue Cross Of California, 21555 Oxnard St., Woodland Hills. Call (818)789-0723 or write P.O. Box 16971, Encino, CA 91416.

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Long Beach IBM Users Group. Meetings: 3rd Wednesdays. 7 PM, 5950 Willow St. at Los Altos Methodist Church, Long Beach. Contact: Jim Wells. (213)439-7114.

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Orange Coast IBM PC User Group. Meetings: last Sat. 9 AM Science Hall, Orange Coast College, Costa Mesa, CA.

Orange County IBM PC Users Group. Meetings: 2nd Thursdays 7:30 PM. Bradford Retirement Community Center, 1180 N. Bradford, Placentia. Meetings feature guest speakers on hardware and software topics related to the interest of our members. Other activities include sharing tips and problems, access to club library and a club newsletter. Call: Mike Lyons, 2114 W. LaPalma, Anaheim, CA 92801. (714)774-3236.

Pacific Computer Club. Meetings: 2nd Thurs. 7PM 391 S. Madison, Pasadena, CA.

Pasadena IBM Users' Group. Meetings: 3rd. Wed. CalTech, Bridge Bldg., Rm. 201. Call Steve Bass, (818)795-2300.

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South Bay Users Group (SBUG). Meetings: 1st Sun. Mercury Savings, Long Beach, CA.

South County PC Users Group. Meetings: 3rd Sat. 9 AM Great American Savings, 23688 El Toro Rd., El Toro, CA.

SWPC Users Group. Meetings: Saturday mornings, various places. Call: Christine Tripp, (213)935-4105.

Technical Users Group (TUG-NET). Meetings: Call for info (818)882-6045. BBS (818)882-6045.

The Foothill Computer Club. Meetings: 1st Wednesdays, 6:30 pm, Glendale Federal Bank, 2350 Honolulu, Montrose. Call: (818)790-6672.

The IBM & Compatibles User Group (ICUG). Meetings: 4th Thurs. 6:30 PM or 7:30 CAL Lutheran Univ., 60 W. Olsen Rd., Thousand Oaks. Group is 5 yrs. old & has 150 members Meetings begin at 6:30 for beginners, 7:30 regular members.

The Southern California K-Man Users Group. Meetings: 1st Wednesday, 7:00 P.M., Laventhol and Horwath, Executive Conference Room, 7th Floor, 3699 Wilshire Blvd., LA. Demo of the month features new software and hardware.

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Valley Computer Club—IBM. Meetings: 1st Wednesdays, 7 pm, Burbank Bd. of Realtors Bldg., 2006 W. Magnolia, Burbank. Call: Wes Arnold, (213)221-4433.

VICUG (Valley IBM/Compatible Users Group). Meetings: 4th Fridays, 7:30 pm, Mercury Savings Bank, 14801 Ventura Blvd., Sherman Oaks. Call: Harry Tischler, (818)997-6000.

VICUG–DTP (Valley IBM/Compatibles Users Group). Meetings: 7:30–10:00 pm, Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. Call: Harry Tischler, (818)997-6000.

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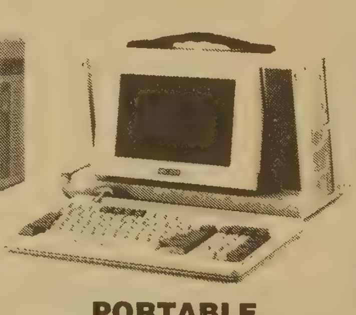
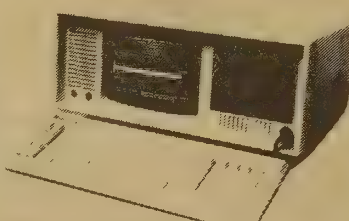

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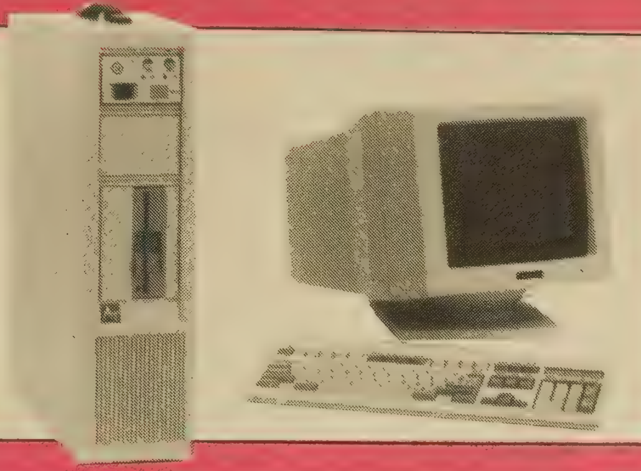

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California State University Macintosh Users Group. Meetings: California State University, Long Beach.

Conjo Ventura Macintosh Users Group, Inc. Meetings: 1st Thursdays, Thousand Oaks Public Library, 1401 E. Janss Road, Thousand Oaks. Call: Ed or Ellie Darling at (805)584-8733.

LAMG (Los Angeles Macintosh Group). Meetings: Call (213)278-LAMG or write 12021 Wilshire Blvd. #349, Los Angeles, CA 90025.

MacValley. Meetings: 3rd Tues. 7:30 PM Burbank High School Cafeteria at Burbank Blvd. and Third St. Call David Lagerson, (818)998-5546 or write P.O. Box 4279, Burbank, CA 91503.

Moreno Valley Macintosh Users Group (MVMUG). Product demos, newsletter, SIGS, BBS, more! For information about the club and meeting call: (714)684-1337.

Original Apple Corps. Meetings: 2nd Sun. 12:00 Noon 3rd Floor Community Room, Santa Monica Mall. First Apple group ever. SIGs for AppleWorks, Telecomm, Educators, Macintosh. Call Fred Duffy at (213)396-5515.

San Gabriel Valley Mac Users Group. Meetings: 1st Thursdays, 7:30 pm, 285 E. Walnut, Pasadena. Call: Frank Chavez, (213)684-ICON.

San Gabriel Valley Macintosh Users Group. Meetings: 1st Thursdays, 7:30 pm, Pasadena City Library, 285 E. Walnut. (213)684-4266.

Santa Barbara Macintosh Users Group. Meetings: First Tuesdays, @ 7 PM, Goleta Library. Publishes a newsletter with reviews, offers advice, support for Mac users, discounts at local dealers. Call: Morris Herman, 987-5511, x 2083.

SBAMUG (South Bay Apple Mac User Group) Meetings: Last Wednesday of each month, 7:30 PM, Ticor Title, 4240 Artesia Blvd., Torrance. Call (213)316-7738.

West Orange County Macintosh Users Group (WOCMUG). Meetings: Last Tuesday. F & M Bank in Rossmore Center, Orange County, CA.

Whittier Area Mac Users Group. Meetings: 2nd Saturdays, 10 am, Granada Heights Friends Church, 11818 S. La Mirada Blvd., Rm. C-21. (213)947-2447.

Whittier Area Macintosh Users Group. Meetings: 2nd Saturdays, 10 am, 11818 S. La Mirada, La Mirada. Call: Bob Rockhill, (213)947-2447.

NETWARE

Orange County Netware9 Users Group (OCNET). Meetings: 2nd Tues., New Horizons Computer Learning Center, 1231 E. Dyer Road, Suite 140, Santa Ana.. Various SIGs. Open to users, consultants, all interested in NETWARE. Call Mark at (714)955-0616.

NetWare User Group Los Angeles (LOSNET). Meetings: 2nd. Wednesdays. Welcomes consultants, CPA's, dealers and users interested in sharing information on NETWARE and related products. Call Fane, (213)452-1335. 2716 Ocean Park Blvd, Santa Monica 90405.

OPEN SYSTEMS

Open Systems Accounting, So. Cal Users Group (OSASCUG). Meetings: 4th Wed. Wyle Labs, Irvine, CA. Users of Open Systems, Altos Accountant, CADO, & Rexon accounting software. Open to end users, dealers and consultants. Call Mark at (714)955-1724.

OSAS Systems Users Group Los Angeles (OSASUGLA). Meetings: 1st Wednesdays. Welcomes consultants, CPA's, dealers, users and QI's interested in sharing information on OSAS and related products. Call Fane, (213)452-1335. 2716 Ocean Park Blvd., Santa Monica 90405.

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R:BASE

Law Enforcement R:BASE Users Group. Meetings: Online. Available through the Safetynet Forum on CompuServe. Monthly newsletter for those without a modem. Users share tips and techniques. The group acts as a clearing house for PD and shareware law enforcement applications. To join, officers must leave a private message in CompuServe's online Safetynet Forum.

TANDY/RADIO SHACK

Los Angeles - Wilshire Color Computer Users' Group. Meetings: 2nd Sat. 12:30-5:30 PM Felipe de Neve Library's Comm. rm., 2820 W. 6th St., LA, CA.

South Bay Users Group (SBUG). Meetings: 3rd. Fri. Mercury Savings, 22939 Hawthorne Blvd., Torrance, CA.

TEXAS INSTRUMENTS

Pomona Valley 99ers. Meetings: 7:30 pm, 2nd Wednesday, Pomona First Federal, 9900 Central Ave. Call: Bill Hauns. (714)628-1334.

Brea 99'ers User Group. Meetings: 1st Mondays, 7:30 pm, Mercury Savings 1001 E. Imperial Blvd., La Habra, CA. (714)871-3405.

LA 99er Computer Group, 4th Wednesdays, @ 7:15 PM, Torrance Public Library, Torrance Blvd. @ Madronna. Call: Teresa Masters, (213)271-6930.

San Fernando Valley TI-99/4A User Group. Meetings: 2nd Wed. 7:30 PM Doctor's Conf. Rm., Sherman Oaks Hospital, 4929 Van Nuys Blvd. Call for info: (805)379-2937. Or write: SFV 99ers, 633 Hollyburne Ln., Thousand Oaks, CA 91360.

TIPC West. Meetings: 3rd Mondays, 7 pm, 11828 Jefferson Blvd., Culver City. Call Lew Howard, (213)397-9668.

UserGroup of Orange County. Meetings: 1st Thurs., 7:30 pm, 7813 Edinger, Huntington Beach. Call (714)633-7317.

TIMEX/SINCLAIR

Timex-Sinclair. Meetings: Call John W. Petersen (213)545-9581 or George Kuby at (213)551-9454. BBS: Grey Matter (213)971-6260.

VENTURA PUBLISHER

Southern California Ventura Publisher User Group (SC-VPUG). Meetings: Last Wednesdays, 7–10 pm, Location changes. Call: (818)955-5830.

See page 106 for information on how to submit your User Group, Association, or BBS listing.

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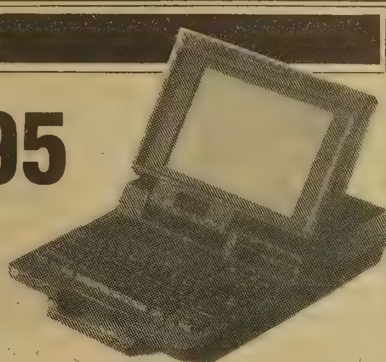

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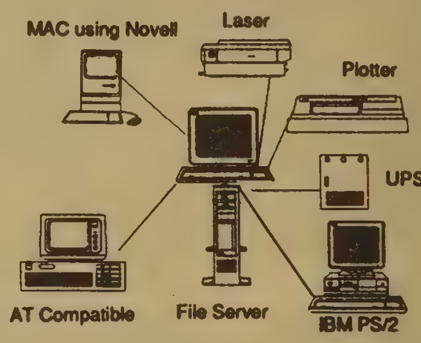

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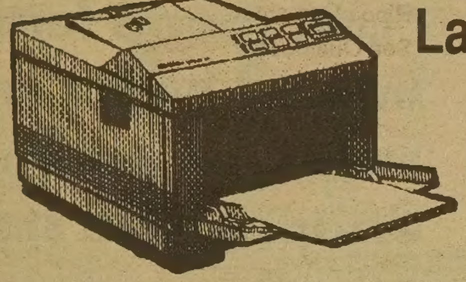

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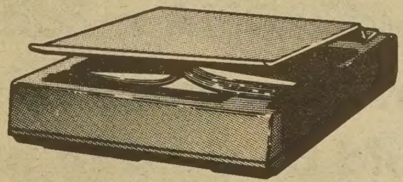

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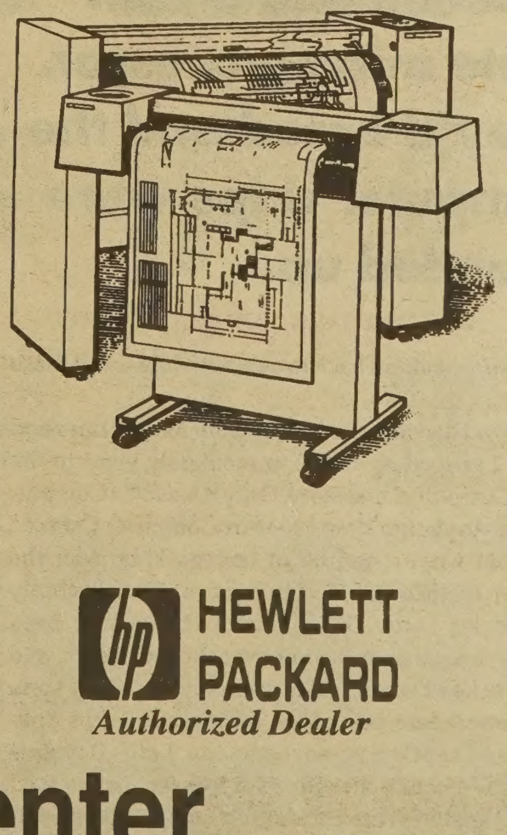

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DVORAK'S LAST COLUMN • BY JOHN C. DVORAK

THE YEAR 2030

The Age of Spit And Vinegar—And Computers That Eat Chips

I had heard about room 1132 at the Cambridge Hyatt in Boston, but it wasn't until I stay there and jumped into the worm hole that I believed any of the tales.

It's on one of the couches. A worm hole into which you are tossed 40 years into the future, 2030 to be exact. Nobody will believe this story, but most of it is true. I say "most of it" since I bumped my head on the return trip.

The return worm hole is in the second seat of a roller coaster that was installed on the site of the Boston Aquarium near what was once a Marriott hotel. It's a dangerous move, because you have to stand up right on one of the curves. I knew all this because all of us time travelers are given a little tip sheet so we can get back to our own time to tell these tales.

Apparently in 2010 a couple of guys who quit Genentech developed a DNA modification technique which could be used to turn a beetle into a complete microprocessor. They'd breed and the computer chips were rounded up.

I knew I had to write a column for *MicroTimes* and when I arrived in 2030 I immediately went to the local ComputerLand store. Only it wasn't a ComputerLand anymore. It was K-Mart Computer Center.

Inside were a couple of college kids from the Boston Institute of Technology, a school wholly owned by Lotus Development. Lotus had been buying property in Boston over the past years, and by 2030 had become a major landowner. They spun off the software part of the business as Lotus Software and kept the parent company, Lotus Development, as a condo developer in Massachusetts.

A couple of years before I arrived Jim Manzi was elected Mayor in a disputed election and was unfortunately killed by a runaway garbage truck two nights later. The police suspected foul play but were unwilling to investigate, calling it an unfortunate accident.

The chief of police, Maximilian O'Reilly, said that it was typical of Boston driving, and asked why Manzi was in the middle of the street anyway. The runner up, Vito Lucci, head of the Lucci Cartage Company, was named Mayor.

"A lot of things have changed," a sales clerk at K-Mart Computers told me. He said he remembers a columnist named Dvorak who now wrote ad copy and was part owner of Laser Sky Write, a wild advertising medium where the sky is burned by discarded surplus Star Wars lasers. A brown smudge, visible from earth, is actually carved in the ozone layer. At any time you could look up and see ads in the sky. Some people thought the whole idea was tasteless, but it turned out the the technique, apparently developed by Dvorak's partner, rebuilt the ozone layer while providing useful advertising.

The sales clerk continued, "Since the invention of the Bug 2000 organic microprocessor, the industry has changed completely. This year Insectel expects to release its Bug 8888, the latest multi-processing beetle."

Apparently in 2010 a couple of guys who quit Genentech developed a DNA modification technique which could be used to turn a beetle into a complete microprocessor. They'd breed and the computer chips were rounded up. Within a few years the right circuit was designed, the feet and antennae of the bug acting as contacts for the microprocessor "brain." By 2020 I/O and even a video display unit were embodied in the bugs.

"The new bug 8888 is supposed to be capable of 100 megaflops," said the clerk. "It's amazing. Almost all the TV sets in the country are crawling with beetles and roaches for special effects. Last year a fertile Insectel beetle was stolen, or somehow escaped, and started breeding with regular beetles. The whole countryside was crawling with hybrids which the kids were using to make illegal computers."

"Illegal!?!?"

"Yes, all the computers required a license after the Hacker Wars of 1998, when nearly all the computers in the Northern Hemisphere were stopped on Mayday by a group of hackers who determined that the once popular operating system, OS/2—is that before or after your time?—had a peculiar hackable flaw called a Sys Trap Door. This allowed self running code to reside in a section of the program and communicate with other pieces of code planted through the backdoor of other OS/2 machines. In unison all the OS/2 systems on every platform went down at once. In 1997 the world was 80% OS/2 on all platforms. Most machines were controlled or linked to OS/2."

"You're kidding!" (I may be wrong about all this from the head bump.)

"Last year a fertile Insectel beetle was stolen, or somehow escaped, and started breeding with regular beetles. The whole countryside was crawling with hybrids which the kids were using to make illegal computers."

"It was a disaster for Bill Gates, who sold Microsoft to IBM for $20 billion in 1995. He was blamed for the peculiar trap door and the ability of the program to communicate with other OS/2 modules. He was supposed to run for public office in 1998, but was ridiculed and blamed for the fiasco and hacker attack. He moved to Tokyo a year later and lives there still, now an embittered 73-year-old recluse who supposedly has maniacally collected all his saliva for the past 20 years, saying it gives him strength. There was a special on *60 Minutes* last Sunday which showed the huge clear glass tank of spittum he keeps on a hillside tank farm outside of his Tokyo cottage. Some of the local Japanese are said to worship the stuff, and deals have been made to sell it if Gates dies."

"Those crazy Japanese," I said as I looked at the selection of floppy disks for sale. "What are these?"

"Those are micro-floppies. They are the size of a grain of salt and are ingested by the Bug computers. They hold a gigabyte each. The new double density ones hold two gigabytes, but a lot of people just chip off the little mini notch in the one gigabyte disk and find it works in a two gigabyte beetle."

My time was running short, so I gathered as many maps as I could find, so when I returned I could make more efficient use of the four hours that I can stay in the future without dissolving. At least, four hours is what it says on the brochure.

So I rushed over to the roller coaster and followed the procedure. When I returned I conked myself on a cheap vase in the hotel room near the worm hole couch. I took as many notes as I could upon my return, then filed this column. All I really learned this trip is that in the future we will still have buggy hardware!

Yes, it is a long trip, isn't it? ■

John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine and MacUser, considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.

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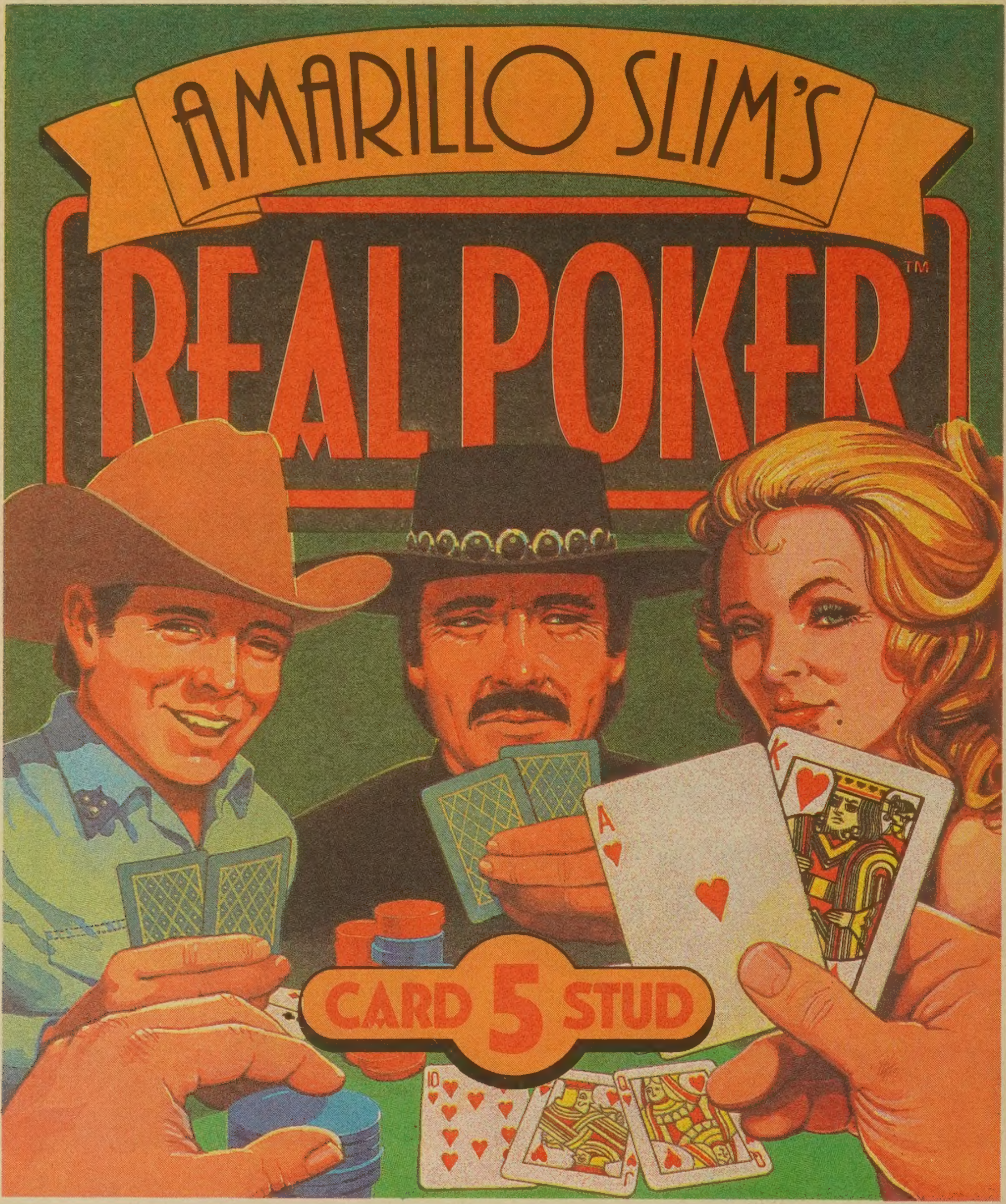
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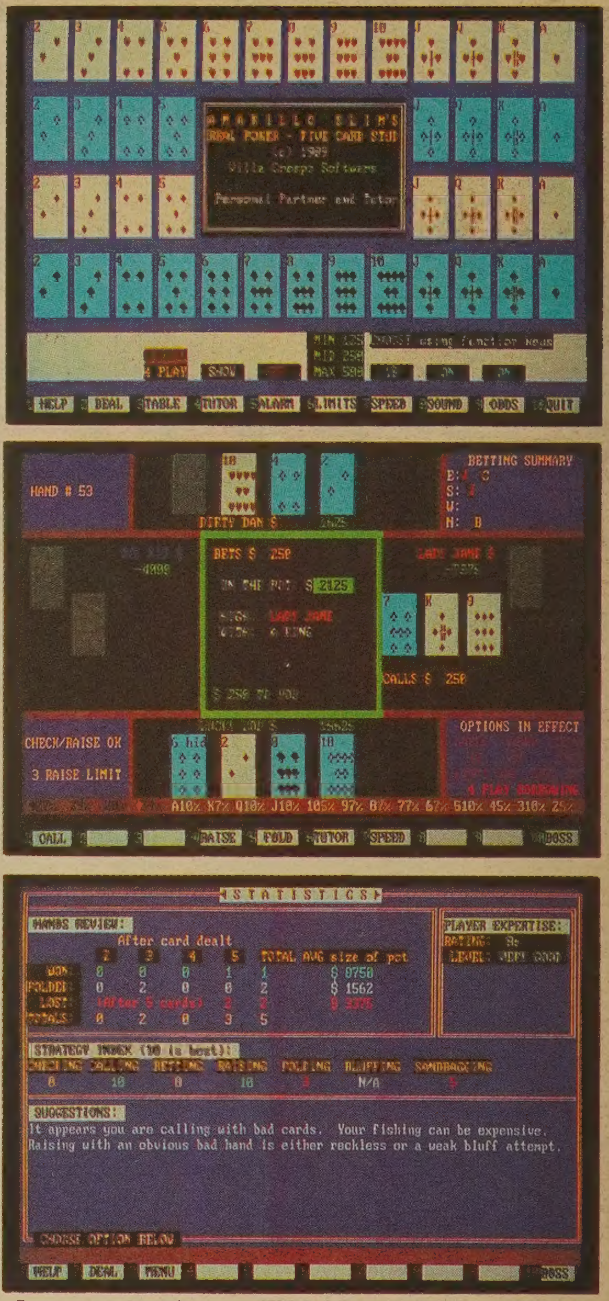
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ODDS
QUIT
HAND # 53
BETTING SUMMARY
DIRTY DAN $
BETS $ 250
IN THE POT $ 2125
LADY JANE $
CALLS $ 250
CHECK/RAISE OK
3 RAISE LIMIT
OPTIONS IN EFFECT
A10% K7% Q10% J10% 105% 97% 87% 77% 67% 510% 45% 310% 25%
CALL
RAISE
FOLD
TUTOR
SPEED
BOSS
STATISTICS
CHOOSE OPTION BELOW
HELP
DEAL
MENU
BOSS

HANDS REVIEW:

	2	3	4	5	TOTAL	AVG size of pot
WON:	0	0	0	1	1	$ 0750
FOLDED:	0	2	0	0	2	$ 1562
LOST:	(After 5 cards)			2	2	$ [illegible]
TOTALS:	0	2	0	3	5	

PLAYER EXPERTISE:
RATING: [illegible]
LEVEL: VERY GOOD

STRATEGY INDEX (10 is best):

CHECKING	CALLING	BETTING	RAISING	FOLDING	BLUFFING	SANDBAGGING
8	10	8	10	[illegible]	N/A	[illegible]

SUGGESTIONS:
It appears you are calling with bad cards. Your fishing can be expensive.
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Screens taken from an IBM AT with EGA graphics. Others may vary.

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